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1971 - 1972 COUNCIL.

Members are advised that there were only sufficient nominations to fill vacancies on Council, accordingly there was no need to hold an alection. We welcome to the Council one new member, Mr. Bob Lowe, a keen native orchid grower and one of our hardest workers at Group meetings and shows.

MEMBERSHIP RENEWAL.

Members are reminded that subscriptions to The Society were due on the 1st. July. Ordinary membership is $2.50 per annum.

6th. WORLD ORCHID CONFERENCE.

Eric Gordon, one of our keenest members, who is very well known to a majority of members has made available to The Society copies of his paper presented at the 6th. World Orchid Conference. The paper, titled "The Distribution of Orchid Species In Australia" is of some eleven pages and contains the most comprehensive list of Australian Native Orchids presently available. Copies are available from your Society for 20¢.

"Orchids of Australia" by W.H. Nicholls

I am reliably informed that copies of Nicholls' famous work are now available from some bookshops at discounted prices. Whilst this news will be disturbing to those members who paid the full price at publication, those now desirous of obtaining a second copy, or were unable to afford the publication price can pick up a bargain! Prices, I understand var between $12.50 and $13. Should you have difficulty in finding a copy at these prices don't hesitate to contact our Secretary who will be able to put you in touch with a copy.

COUNCILLOR'S RESIGNATION.

It is with a deep sense of loss that Council has accepted the resignation of Harold Jay from his long held position of Honorary Secretary. Harold has recently retired from business and is devoting his energies to the establishment of a new home and orchid collection on the New South Wales north coast. I understand he hopes to be moving in to his new home at Christmas. All members will join Council in expressing to Harold and his wife Evelyn our thanks for their untiring efforts on The Society's behalf and wish them a long and happy retirement.

A FIELD STUDY OF *DIPODIUM HAMILTONIANUM* F.M. BAILEY IN SOUTHERN N.S.W. D. Jones & A.E. Logan

It seems obvious from the literature that nobody has made a detailed comparative study of the morphology and field relationships of *Dipodium punctatum* (Sm.) R.Br. and *Dipodium hamiltonianum* F.M. Bailey. This is perhaps surprising since there has been much speculation about the relationships between both species, particularly relating to the status of the latter. Bailey himself must have had second thoughts about his own judgement, as in 1883, only two years after its publication as a species (1), he reduced *D. hamiltonianum* to a variety of D. punctatum (2). No information is given in this publication nor is any given in the Queensland Flora (3) published some nineteen years later, so we are left in the dark as to the reasons that motivated the reduction. In his discussion following the original description Bailey states "The shortness of the scales, the colour of the flowers and above all the prostrate or recumbent positions of the caudicles which is constant in all flowers examined separate this species from D. punctatum". These differences are minor and he may have considered them insufficient for specific separation.

The type material came from Stradbroke and Peel Islands in Moreton Bay, off the south Queensland coast. The species was named after Mr. James Hamilton, then Superintendent of the Benevolent Museum, Dunwhich who in Bailey's words "has always lent a helping hand to collect the natural history specimens of the islands of Moreton Bay".

A year after the original publication, FitzGerald depicted a plate of the species under the name *D. punctatum* (4). This plate is undoubtedly *D. hamiltonianum* although the dirty greenish colour of the flowers does not do the species justice. Some details of the flower parts are shown, however the depiction of the callus plate is very poor. Coincidentally these specimens were also collected by a Mr. Hamilton, this time Mr. A.G. Hamilton from Guntawang near Mudgee in Central Western N.S.W. This collection has been dealt with by Cheel (5). Clemesha seems to have confused this latter collection which FitzGerald illustrated, with the original one upon which Bailey's species was based, as he cites the latter details of locality and collector for the type material (10).

Very little seems to have been published on *D. hamiltonianum* in the 1930's and '40's when Nicholls, Rupp and Rogers were active. In fact it seems doubtful if Nicholls and Rogers ever saw fresh material of the orchid. Rupp includes it in both of his books (6), (7) but with very few comments.

In recent times there has been a spate of articles on the species, mostly discussing its status relative to *D. punctatum*. Nash (12), (13) and Howcroft (14) both advocate its recognition as a variety of *D. punctatum* rather than a species, but their comments seem to be based on observations rather than measurements. Nash makes the suggestion that *D. hamiltonianum* may be an older and more fixed form than *D. punctatum*, based on the relative constant features of the flower. Clemesha makes the very important point that the flowers in the whole genus are basically very similar, even though the forms are easily separated as distinct species on factors such as growth habit (11). Dockrill has advocated that a thorough study should be made of both species (8).

In this paper we will present the results of a comparative study carried out over the last two years in the Carabost area, near Tumbarumba, of southern N.S.W. One of the author's (A.E.L.) lives at Carabost and has made a detailed field study of both species. The other author has made critical dissections of the floral parts of *D. hamiltonianum* from Carabost, and *D. punctatum* from several areas in Victoria and N.S.W. including Carabost. From this study we are convinced that *Dipodium punctatum* and *D. hamiltonianum* are separate species. We must emphasise however that our findings are only based on southern N.S.W. material.

The country around Carabost where *Dipodium hamiltonianum* grows consists of rugged, fairly steep hills that are densely timbered with various *Eucalyptus* species. At ground level the vegetation is usually sparse although some areas may be thickly covered. The soil on the hills is thin, clayey and skeletal. Geologically the hills are granite and large outcrops of this rock occur towards the summits.

In the field *D. hamiltonianum* has a very restricted habitat, while *D. punctatum* is common over the whole area. *D. hamiltonianum* is invariably restricted to northerly facing granite outcrops near the summits of hills, ridges, and consequently is nowhere near as common as the other species. The conditions where it grows are harsh and the number of plants flowering varies from year to year, with seasonal conditions. In some areas both species grow intermingled, but even here thay have slightly different flowering times. *D. hamiltonianum* usually begins flowering as *D. punctatum* is finishing.

Taxonomically the species have more differences than many of our orchids. These are listed in Table 1 and the accompanying drawing gives a comparison of the floral details. The

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A Field Study Of Dipodium hamiltonianum F.M. Bail. In Southern N.S.W. cont.

measurements of all the floral parts of D. hamiltonianum are larger than the corresponding one of D. punctatum and these do not overlap with specimens from any area. Size however is not the only difference as the comparisons of the labella and column details will show. One of the most significant features is the shape of the callus plate of the labellum. In D. punctatum the keels converge from the base while in D. hamiltonianum they diverge. A second important difference lies in the pollinarium. The pollinia of Dipodium hamiltonianum are approximately twice the diameter of D. punctatum while the stipes attaching them to the viscidium are approximately three times the length of those of D. punctatum. Colour is generally a poor guide to the identification of a species however in this case it seems very reliable. D. hamiltonianum is always yellow or greenish yellow while D. punctatum varies from pale pink to a deep reddish pink.

A few secondary features have been listed at the end of Table 1. While these may not be important criteria they seemed sufficiently constant in the specimens examined to be worth reporting on. The large raceme is characteristic and in some plants occupies more than two thirds of the total height. This feature combined with the sparse nature of the raceme and the semi-pendent flowers gives the species a very characteristic general appearance that is markedly different from D. punctatum.

TABLE 1

D. punctatum	D. hamiltonianum
Stem bracts ovate, acute.	Stem bracts ovate, obtuse.
Flowers 20 - 35 mm. in diameter.	Flowers 30 - 60 mm. in diameter.
Flowers whitish to pale pink or deep reddish pink.	Flowers greenish yellow to orange yellow.
Perianth segments elliptic-lanceolate.	Perianth segments linear to linear-obovate.
Labellum 11 - 14 mm. long.	Labellum 16 - 19 mm. long.
Lateral lobes 4 - 5 x 1.0 - 1.2 mm.	Lateral lobes 7 - 9 x 1.2 - 2.0 mm.
Labellum lamina sparsely pubescent.	Labellum lamina densely pubescent.
Callus 6 - 7 x 2 - 3 mm., the keels converging.	Callus 8 - 9 x 4 - 5 mm., the keels diverging.
Column 5 - 7 mm. long, of equal width throughout.	Column 8 - 9 mm. long, narrowing in at the base.
Anther cap 1.4 mm. long, with a rostrum 0.7 - 0.5 mm. long.	Anther cap 2.3 - 2.5 mm. long with a rostrum 1.3 - 1.4 mm. long.
Pollinia 0.4 - 0.6 mm. in diameter, the stipes 0.5 - 0.6 mm. long.	Pollinia 0.9 - 1.0 mm. in diameter, the stipes 1.3 - 1.4 mm. long.
Secondary features noted	
Rhachis occupies less than half the inflorescence.	Rhachis occupies more than half the inflorescence.
Flowers often crowded.	Flowers never crowded.
Flowers erect	Flowers lax or semi-pendent.
Perianth segments spreading, usually reflexed.	Perianth segments spreading, rarely reflexed.
Grows in widespread situations.	Grows in very restricted areas.

The various specimens of Dipodium punctatum examined and measured during this survey were remarkably constant in all the major features. Colour, degree of spotting and flower size were the most variable factors although none overlapped with the same features in D. hamiltonianum. The most striking specimen examined was from French's Forest near Sydney. Only a solitary specimen was seen, but in general appearance it was very similar to D. hamiltonianum. Its flower stem was green and the inflorescence loose and open. The flowers themselves were pale pink and heavily blotched with red markings as in D. hamiltonianum. A comparative study showed however that these were the only points of similarity between

continued p. 4.

A Field Study Of Dipodium hamiltonianum F.M. Bail. IN Southern N.S.W. cont.

the two species. The specimen was seen in the company of Steve Clemesha and at the time he remarked that there are two distinct populations of D. punctatum in the Sydney area. This has since been discussed with Peter Uhlherr who has some excellent slides of both forms. The solitary specimen examined from French's Forest is certainly different from others seen in the study, and is closer to D. hamiltonianum, although still distinct. It raises the interesting query as to which form of D. punctatum is the type form. Sir James Smith named his punctatum from material collected near Sydney, where both forms occur.

Nash has suggested that D. hamiltonianum may be an older and more fixed form than D. punctatum, and this seems to be born out by distributional data and results from this survey. This does not mean however that it is a more primitive form, as there are too few differences on which to form an evolutionary opinion; nor does it mean that D. punctatum has evolved from D. hamiltonianum, as both may be the present day end products of evolutionary branches arising from common ancestral stock.

No information is available on the pollination of D. hamiltonianum although it is certainly insect pollinated. The pollinary mechanism of D. punctatum has been dealt with by Rogers (15) and that of D. hamiltonianum is essentially similar in all major details. A study of the pollination ecology of each species may reveal the significance of flower colour. As an illustration, Hover Flies were observed to be actively attracted to D. hamiltonianum in the Carabost area, although they were not seen to remove pollen. It is well known that these insects are attracted to yellow flowers and it would seem feasible that a different group entirely is attracted to the pink colour of D. punctatum.

In concluding we state that in our opinion Dipodium punctatum and D. hamiltonianum are separate species. We must emphasise however, that our results are based on a study of material from the southern end of the range of Dipodium hamiltonianum, and the position may be more complicated in northern areas where the type material and majority of reports have originated. A similar study in a northern area would help clear up these doubts.

Description: Plant terrestrial, saprophytic, leafless; consisting of a short subterranean branching rhizome with an extensive system of long, thick, fleshy roots; branches of the rhizome covered with fleshy, imbricate bracts and terminate in an inflorescence; bracts 3 - 6 ± ovate, truncate or obtuse. Inflorescences 30 - 80 cm. tall, slender, bearing 3 - 25 pedicillate flowers; peduncle shorter than the rhachis, a greeny-yellow, occasionally tinged with red. Pedicels subtended by a broad-lanceolate bract 7 - 12 x 3 - 5 mm. Pedicels 15 - 28 mm. Flowers 30 - 60 mm. in diam., a greenish-yellow with numerous deep red spots, blotches or rarely striations. Sepals 17 - 27 x 4 - 5 mm., linear to linear-obovate with acute tips, spreading but rarely recurved. Petals ± similar to the sepals but slightly shorter and narrower. Labellum 14 - 19 mm. long, varying from deep purple to white; lateral lobes 7 - 9 x 1.2 - 2.0 mm., ± linear-obovate, densely pubescent on the inside base; mid-lobe 11 - 14 x 5 - 7 mm., ovate-elliptic, a large, densely pubescent patch occupying the upper ½ to 2/3 of the lamina, the lower ½ to 1/3 being occupied by a prominent raised callus; callus consiting of two raised, conspicuous, densely pubescent keels which diverge from the base; area of callus between keels and pubescent patch raised and shortly pubescent. Column 8 - 9 mm. long, erect, bearing the anther and stigma in the upper third, the apical margin sinuate. Stigma transverse, elliptic, deeply sunken 2 x 1 - 1.5 mm. Anther cap 2.5 x 2 mm., white, two celled, slightly keeled on top with a conspicuous ± ovate rostrum ± 1.3 mm. long. Pollinia four, 0.9 - 1.0 mm. in diam., orbicular, deep orange, waxy; on retractile stipes 1.3 - 1.4 mm. long, the subulate tips of the stipes extending past the pollinia. Viscidium 0.8 mm. in diam., circular, orange. Seed winged.

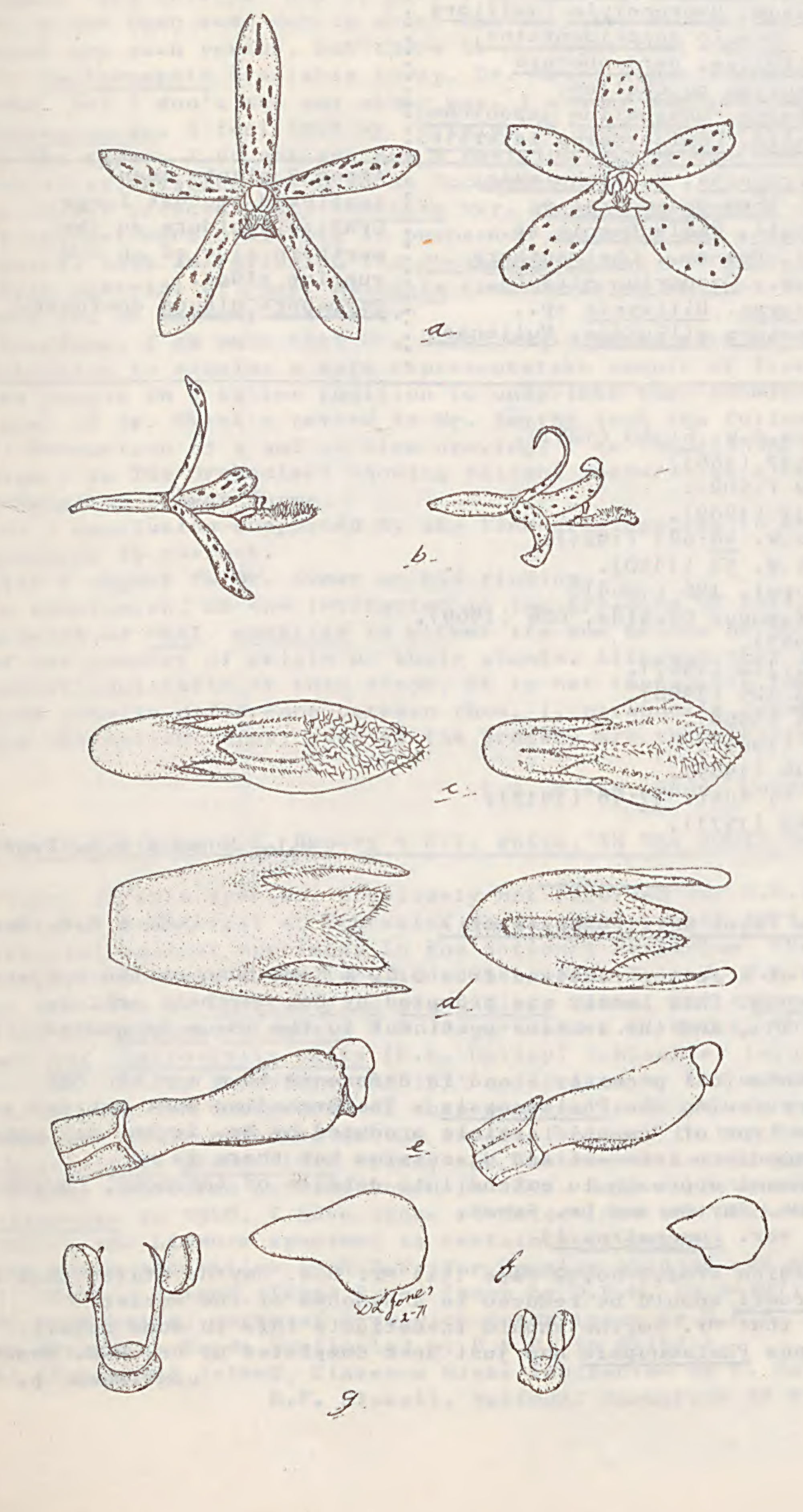
ASSOCIATION

Colony	Association	Remarks
Jock's Mountain Carabost area.	Eucalyptus macrorhyncha, E. mannifera, E. polyanthemos Persoonia rigida, Hibertia obtusifolia, Danthonia pallida, Poa sp., Stipa sp., Melichrus urceolatus, Acrotriche serrulata, Dillwynia revoluta, D. retorta var.	About 16 plants seen scattered amongst Granite boulders on a steep, dry, north facing slope. No species dominant.

continued p. 5.

A Field Study of Dipodium hamiltonianum F.M. Bail. In Southern N.S.W. cont.

Dipodium hamiltonianum F.M. Bail. Dipodium punctatum (Sm.) R.Br.



KEY TO PLATE

a. Flower from front - 1½X nat. size.
b. Flower from side - nat. size.
c. Labellum from above - 3X nat. size.
d. Callus plate - 6X nat. size.
e. Column from side - 4X nat. size.
f. Anther cap from side - 10X nat. size.
g. Pollinarium - 10X nat. size.

A Field Study Of *Dipodium hamiltonianum* F.M. Bail. In Southern N.S.W. cont.

Colony	Assoaciation	Remarks
Jock's Mountain Carabost area.	*phylicoides*, *Wahlenbergia* sp., *Hypocheris radicata*, *Drosera auriculata*, *Cheilanthes tenuifolia*, *Puntenaea hispidula*, *Hovea linearis*, *Sebaea ovata*, *Lomandra* sp., *Opercularia aspera*, *Pimelea humilis*, *Platylobium formosum*, *Hydrocotyle laxiflora* *Acacia dealbata*, *Senecio quadridentatus*, *Stylidium graminifolium*, *Hardenbergia monophylla*, *Centaurium pulchellum*, *Tetrarrhena tetragyna*, *Gnaphalium japonicum*, *Indigofera australis*, *Lepidosperma laterale*.	About 16 plants seen scattered amongst Granite boulders on a steep, dry, north facing slope. No species dominant.
Arnott's Lookout area.	*Eucalyptus macrorrhyncha*, *E. blakeleyae*, *Stypandra glauca*, *Themeda australis*, *Burchardia umbellata*, *Wahlenbergia* sp., *Asperula conferta*, *Poa* sp., *Cheiranthera linearis*, *Hovea* sp., *Casuarina stricta*, *Tetrarrhena tetragyna*, *Dillwynia* sp., *Cassinia* sp., *Monotoca elliptica*, *Pultenaea* sp.	About 5 plants seen scattered amongst large Granite boulders on the northern side of an E-W running ridge. *Stypandra glauca* dominant.

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4) FitzGerald, R.D. Aust. Orch. 17 (1882).
5) Cheel, E. Proc. Linn. Soc. N.S.W. 48:681 (1923).
6) Rupp, H.M.R. Guide Orchids N.S.W. 51 (1930).
7) Rupp, H.M.R. Orchids N.S.W. Suppl. 126 (1969).
8) Dockrill, A.W. Australian Indigenous Orchids, 626 (1969).
9) Cady, L. Aust. Plants 2:41 (1963).
10) Clemesha, S.C. The Orchadian 2:112 (1967).
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12) Nash, R.C. The Orchadian 2:128 (1968).
13) Nash, R.C. The Orchadian 3:37 (1969).
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D.L. Jones & A.E. Logan.

PHALAENOPSIS AMABILIS var. *papuana* (syn. var. *rosenstromii*)

C.C. & E.M. Bunn

The following material forms part of a letter received from C.C. & E.M. Bunn on the subject of *Phalaenopsis amabilis* var. *papuana*. This letter was prompted by Bob Smythe's article in The Orchadian Vol. 3. No.12.p. 154, and the section pertinent to the issue is quoted in toto. Editor

"I feel that in the interests of botanical accuracy - and in deference to a man who has just completed a mammoth task in reviewing the *Phalaenopsis* - The Orchadian must publish a note to the following effect. 'The type of "casual" article produced by Mr. Smythe may make The Orchadian more readable and stimulate interest and discussion but there is no justification for allowing this casual approach to extend into details of taxonomy. Copies of this letter have been sent to Mr. Smythe and Dr. Sweet.

Phal. amabilis var. *papuana* (syn. var. *rosenstromii*)

In the May 1971 issue of The Orchadian (Vol.3 No.12 Page 154) Mr. R.A. Smythe stated that he believed that the variety *rosenstromii* should be reduced to a synonym of the variety *papuana*. It is highly commendable that Mr. Smythe should investigate this in some detail, but an extensive review of the genus *Phalaenopsis* has just been completed by Dr. H.R. Sweet,

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Phalaenopsis amabilis var. *papuana* (syn. var. *rosenstromii*) cont.

of Botanical Museum, Harvard University, Oxford Street, Cambridge, Massachusetts, U.S.A. Dr. Sweet expended considerable effort in tracing herbarium material and records, and with the material available produced some order from the chaos which existed. His review appears in the following American Orchid Society Bulletins:
October 1968 Vol. 37, No. 10, p.895. December 1968 Vol. 37, No. 12, p.1091.
January 1969 Vol. 38, No. 1, p.33. March 1969 Vol. 38, No. 3, p.225.
April 1969 Vol. 38, No. 4, p.321. June 1969 Vol. 38, No. 6, p. 505.
August 1969 Vol. 38, No. 8, p.681. October 1969 Vol. 38, No. 10, p.888.
There has been some debate about the validity of some of Dr. Sweet's work, as there will be about any such review, but there is no doubt that it is the most comprehensive material on the *Phalaenopsis* available today. Dr. Sweet himself wrote: "Some may not like what I have done, but I don't see any other way. I wonder who will next attempt a revision of the genus *Phalaenopsis*. I feel that my revision is well documented by the types and unless one goes to the types, I do not see how a revision can be done for you don't know what is what. It is the first revision which is so documented."
Dr. Sweet reduced *Phal. amabilis* var. *rosenstromii* to a synonym of var. *papuana*, using all of the evidence available in herbarium material and a fresh flower supplied by me. His overall task in reviewing the *Phalaenopsis* was enormous, and the difficulty in obtaining fresh material of *Phal. amabilis* considerable, so that it may be argued that he made his decision on sketchy evidence.
Therefore, I am sure that Dr. Sweet would agree with me in commending Mr. Smythe's stated intention to examine a more representative sample of flower forms. Moreover, there would be few people in a better position to undertake this examination, and it would round off this facet of Dr. Sweet's review if Mr. Smythe took the following action:
i) Production of a set of line drawings (to the standard A.W. Dockrill has led us to expect in The Orchadian) showing salient features of a number of New Guinea and North Queensland flower forms.
ii) A conclusion supported by the line drawings, as to whether Dr. Sweet's publication of synonymy is correct.
iii) A report to Dr. Sweet on his findings.
In conclusion, as one interested in the breeding of native orchid species, I would ask that growers of *Phal. amabilis* in either its New Guinea or Australian forms retain some record of the country of origin of their plants. Although they may prove to be taxonomically undistinguishable at this stage, it is not impossible that future work will demonstrate some genetic difference between them. I, personally, would not care to "cross" New Guinea and Australian forms, even if the progeny are technically *Phal. amabilis* var. *papuana*."

C.C. & E.M. Bunn, Logan Reserve Road, Kingston. Qld. 4205

Zeuxine oblonga R.S. Rogers & C.T. White, IN NEW SOUTH WALES.

Don Blaxell

Plants of this species, previously not recorded for N.S.W., were collected by the author in littoral rainforest at Brunswick Heads in September 1971. During the course of checking the material against specimens in the National Herbarium, the type figure and other references, one specimen was found labelled "Chatsworth Island, N.S.W., F. Bate, 10-1920", determined at the time as *Cheirostylis grandiflora* Blume, but subsequently re-determined by Rupp in 1940 as *Zeuxine attenuata* R.S. Rogers and C.T. White. This specimen is obviously *Z. oblonga* and not *Cheirostylis ovata* (F.M. Bailey) Schlechter (syn. *Z. attenuata*; Dockrill, Orchadian 2:5,68 (1966). Therefore the 1971 collection by the author is not a new collection for N.S.W. but the occurrence of this species in N.S.W. is recorded for the first time herein. Rupp, in 1941, remarked on the two collections in the National Herbarium both labelled *Cheirostylis grandiflora* Blume; the Chatsworth Island specimen and an older collection from Lismore collected by Finselbach in 1896. Rupp re-determined both specimens as *Zeuxine attenuata* in 1940. I have since re-determined the Chatsworth Island specimen as indicated above; the Lismore specimen is certainly *C. ovata*.
The known localities in N.S.W. for *Zeuxine oblonga* are as follows:
1) Stott's Island, Tweed River (seen by D.F.B. in 9-1971).
2) Pottsville, north of Brunswick Heads (seen by D.F.B. in 9-1971).
3) Brunswick Heads (collected by D.F.B. in 9-1971).
4) Chatsworth Island, Clarence River (collected by F. Bate in 1920).

D.F. Blaxell, National Herbarium of N.S W., Royal Botanic Gardens.

NOTES ON THE SECTION MICRANTHUM RUPP, OF THE GENUS PRASOPHYLLUM R.Br.

Leo Cady

Synopsis. In this paper it is proposed to reduce *P. exiguum* Rupp to a synonym of *P. despectans* Hook.f. Describe as new a Tasmanian plant, *P. firthii* Cady Sp. Nov., and record *P. nudum* Hook.f. as accurring in Australia.

For many years the writer has searched in vain for plants resembling the long lost species originally described and figured by R.D. FitzGerald (Australian Orchids 2. (4)), under the name of *P. rufum* R.Br. Rev. Rupp (Vict. Nat. 65:142 (1948)) renamed the plant FitzGerald figured as *P. rufum* R.Br. as *P. exiguum* Rupp. In 1957 the writer's wife Edna, found specimens of a very diminutive pygmae *Prasophyllum* on the road to Jervis Bay N.S.W. These plants were identified by the National Herbarium as *P. despectans* Hook.f. (Herb. Cady No. 438).

In 1959 we discovered *P. despectans* in quantity on Jamberoo Mountain N.S.W. (Herb. Cady No. 441). Both these records were new for N.S.W. While examining a number of the Jamberoo Mt. specimens it became quite apparent that this species was very similar to the plant figured by FitzGerald l.c., and a closer study of both *P. despectans* and the drawing of *P. exiguum* was made. It was apparent from the material examined and the drawing in Australia Orchids, that the plants were identical except for the length of the lobes of the column wings. The wings depicted for *P. exiguum* were distinctly bilobed whereas the usually seen column wings of *P. despectans* were barely notched at the base. Further examination showed *P. despectans* column wings did vary, this variation is shown in figure H of the accompanying plate (Fig. A), thus eliminating this minor point.

The writer hereby proposes that *P. exiguum* Rupp be reduced to a synonym of *P. despectans* Hook.f.

A NEW PRASOPHYLLUM FROM TASMANIA.

Prasophyllum firthii Cady sp. nov. (section *Micranthi*).

Holotype: Friendly Beach road, Bichino, Tasmania, Mrs. J. Firth et B. Alford 15 - 1 - 68. Specimens in the National Herbarium, Royal Botanic Gardens Sydney.

Isotypes: Herbarium Cady. Preserved specimens No. 2719.

Habitu statura ciliorum in perianthio absentia. *P. beaugleholei* Nicholls; *P. nudum* Hook.f. aceedens sed praecipue differt, labellum non crassus. Columnae alae profunde bilobatae.

A slender diminutive plant, up to 8 c.m. tall, usually shorter, bract well below the flowers small and very stem clasping. Flowers to 6, about 4 mm. long, golden green on the sepals, petals and labellum reddish. Dorsal sepal 3 mm. long, cucullate, well covering the column, gland tipped in some plants examined. Lateral sepals 4 mm. long, connate at the very base, linear acute, broadest at the base, tipped with a white gland. Petals triangular acute, 3 mm. long, the midvein extending at its apex into a short mucron. Labellum 2 mm. long, sides parallel or gradually broadening towards the apical 1/3, the apex shortly triangular and at times extending into a short mucron. The margins minutely denticulate. Callus plate inconspicuous, as a slightly raised plate at the base, narrowing into two pubescent ridges which join again at the apex, extending almost to the acute tip. Labellum not fleshy. Column slender just shorter than the petals, translucent, rostellum prominent, the stigma low on the column, its opening conspicuously oval. Column wings translucent, bifid, the smaller lobe acute, the larger lobe longer, acute, its apex hooked towards the smaller lobe.

Distribution: Bichino Tasmania, Mrs. J. Firth and Brian Alford, 15 - 1 -68 also same area Mrs. J. Firth 3 - 70.

Quite a distinct little plant very small flowers somewhat resembling *P. beaugleholei* Nich. and *P. nudum* Hook.f. with its dumpy flowers of diminutive size, but it differs from both plants with a thin non-fleshy labellum and the column wings of *P. firthii* are deeply bilobed whereas both other species mentioned are only indented.

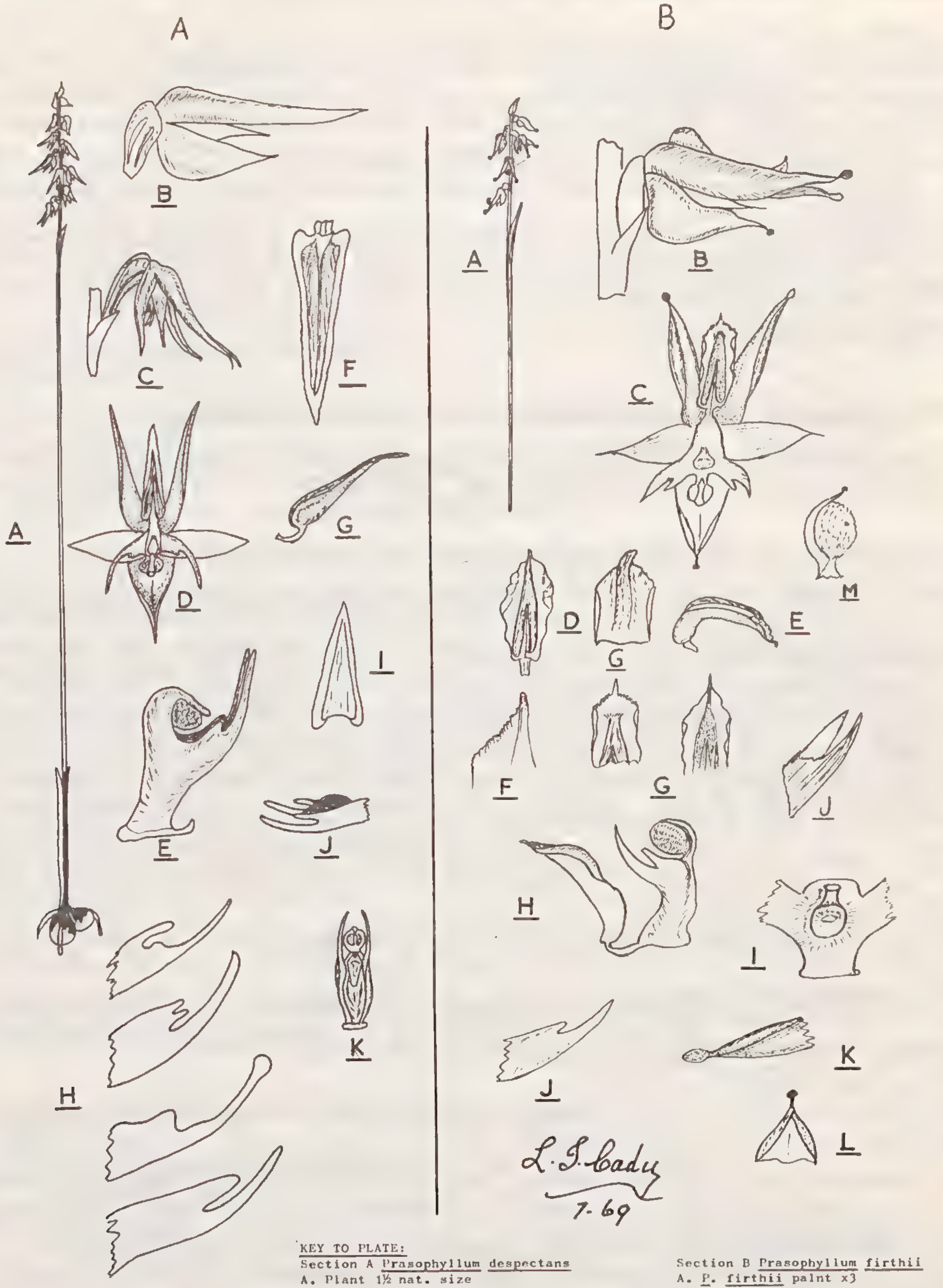
This species is named after the late M. John Firth as a token of his great love of the Australian native orchids. The plants were found by Mrs. Jean Firth and John's son-in-law Brian Alwood, both very knowledgeable people on the Tasmanian flora.

A NEW RECORDING FOR AUSTRALIA.

Some years ago Mr. Howard Judd, Ranger at the Minnamurra Falls Reserve, confronted me with a very diminutive plant of pygmae *Prasophyllum* for identification (Herb. Cady, preserved specimens No. 2720). At the time I regarded the plant as a close ally to *P. hopsonii* Rupp,

continued p.

Notes On The Section Micranthum Rupp, Of The Genus Prasophyllum R.Br. cont.



KEY TO PLATE:

Section A Prasophyllum despectans
A. Plant 1½ nat. size
B. Flower after flowering
C. Flower in full bloom
D. Flower flattened
E. Column side
F. Labellum top view
G. Labellum side view
H. Variation in column wings
I. Labellum of P. exiguum after FitzG.
J. Column ½ side. After FitzG.
K. Column P. despectans front
Fig. A x1½ all rest greatly enlarged.

Section B Prasophyllum firthii
A. P. firthii palnt x3
B. Flower side view x20
C. Flower flattened x20
D. Labellum flat x20
E. Labellum side view x20
F. Labellum tip showing margins
G. Variation in labellum apex
H. Labellum and column x20
I. Stigma greatly enlarged
J. Column wing variations
K. Lateral sepals gland
L. Dorsal sepal gland

Notes On The Section Micranthum Rupp, Of The Genus Prasophyllum R.Br. cont.

a species which only seems to occur in the Barrington Tops area, but even so, in a similar habitat to the Minnamurra Falls plant and incidentally, a habitat quite removed from the typical pygmae Prasophyllum habitat i.e. on open heath-land in sandstone country, for the plants were found on the edge of rain forest under Lantana bushes in leaf mould, on a gradually sloping well drained area.

Further studies on the plants combined with the availability of material from New Zealand, has lead me to the conclusion that the plants are identical to the New Zealand species P. nudum Hook.f.

During the studies on the plants it became obvious that P. hopsonii was very closely allied to P. nudum and could possibly be identical to it. This may be proved incorrect by further material of both species, for only scant material was available for study.

Further specimens of both species would be appreciated by the writer if at any time either of these two are found.

P. nudum is extremely rare in its Australian habitat, about 12 plants were seen.

Leo Cady, Kiama. N.S.W.

NOTES ON THE STRUCTURE AND DEVELOPMENT OF THE TERRESTRIAL ORCHIDS.

E.D. Hatch

> "Precise homologies of underground parts remain obscure and detailed anatomical and developmental studies would be rewarding." L.B. Moore
> (In Moore & Edgar. Flora of New Zealand 2:1970. p.102).

In New Zealand the terrestrial orchid is a typical monocotyledon. It consists of a creeping, branching rhizome with alternating nodes and internodes. Each node bears buds for lead, leaf and branch, and the relative development of these buds depends on their position on the plant. Below the surface leaf-buds form scale-bracts and branches develop freely. Above the surface green leaves are usual and branches less frequent. In those species which lack chlorophyll, the leaves, not being required for food production, retain their underground scale-bract dimensions. The buds are borne only on the nodes and it follows that any bud-bearing structure must be, or include a node. The round tuber in Pterostylis, Corybas, Acianthus etc., is therefore an enlarged terminal node, adapted for food storage, dormancy and regrowth, while the so-called 'root' ehich precedes it is a single elongated internode. Not all these branch internodes bear tubers. Some remain slender, have numerous root hairs and appear to function only as feeders. In Pterostylis those species which have a bracteate-leaved mature form (I have experimented with P. alobula, P. alveata, P. brumalis and P. coccinea) will throw rosettes of juvenile leaves from the nodes of the flower stem in the event of damage to the plant. Usually the lower nodes, but sometimes halfway up the stem, and these branch rosettes will in turn produce their own descending, tuber-forming internodes.

Working with Pterostylis oliveri I discovered that if a flower stem comes into contact with the soil it will throw tuber-bearing branches from the nodes (i.e. from the axils of the leaves).

The elongatedtuber in Thelymitra, Orthoceras and Calochilus, and in Spiranthes also, is an initial node combined with a partly enlarged, following internode. In Gastrodia the whole rhizome is enlarged, nodes and internodes together. Scale leaves and scars of scale leaves point the position of the nodes.

The function of the tuber is to tide the plant over the dry season and in those species which form several tubers, to provide a means of vegetable increase. In mountain species the dormant period is extened to cover the cold season as well. In species which live under relatively damp conditions throughout the year (Adenochilus, Yoania) there is a tendency for the rhizome to be perennial and no tubers are formed. Corybas cryptanthus which is normally rhizomatous, will form tubers under adverse conditions, while Acianthus viridis and Corybas aconitiflorus sport both semi-perennial rhizomes and regularly-formed tubers. Some swamp species are also perennial. Thelymitra pulchella, which sometimes grows in water, will often throw a new leaf alongside the still-green old one and the same occurs in Spiranthes. In Spiranthes also, if the plant is too small to flower it will go on growing and not die back until it has flowered at the end of the second season. Until that is, it has built up sufficiently large tubers with enough store of food to flower on. Spiranthes can do this because of the swamp environment; 'dry' species are often forced to spend

continued p. 11

Notes On The Structure And Development Of The Terrestrial Orchids. cont.

several seasons building up the tubers to flowering size.
In species which have different leaf-forms at different stages in their growth, for example the *trullifolia* complex in *Pterostylis*, the growth-stage depends entirely on the size of the tuber, that is, on the amount of nourishment available. In *Pterostylis alobula* tubers up to 3 mm. in diameter will produce only rosettes, 4 - 5 mm. the intermediate flowering form with both types of leaves, while anything above 7 mm. will produce the mature flowering form with bracteate leaves only. Similarly in *Pterostylis coccinea*, the rubicon is 12 mm. Anything below that will produce a rosette, anything above it a flowering plant. The rosette form which the small plants assume, provides a maximum area of green leaf for photosynthesis and results in the rapid formation of flowering-size tubers. This variation in form does not affect species with basal rosettes (*Pterostylis nutans*, *P. curta* etc.) since maximum leaf development is always present. In the mycorrhizome of *Pterostylis brumalis* chances to develop in a congenial spot, it will throw some tubers large enough to flower the following season, 2 years from seed to seed. But this is rare - the tubers are normally smaller and develop into rosettes. I have done this experimentally and have also grown *Spiranthes* from seed and produced flowering plants in 3 years.
The form the plant takes depends upon the development of the leaves and the length of the internodes. Large leaves and short internodes produce conspicuous rosettes like those of *Pterostylis curta* or *P. nutans*; large leaves and long internodes forms like *Pterostylis banksii*. Scale leaves and long internodes give plants like *Gastrodia* and *Yoania*, while tubular leaves and long internodes give *Prasophyllum* and *Microtis*. The tall seed peduncle of *Corybas* and *Chiloglottis* is a single internode. The structure is simple, but the possibilities are endless, and so the *Orchidaceae* has proved.

E.D. Hatch, 25 Tane Road, Laingholm, Auckland 7. New Zealand.

EARLY RECORDS OF PTEROSTYLIS FOLIATA HOOK.f. FROM N.S.W.

David L. Jones

In The Orchadian 2:76 (1967), J.A.P. Blackmore records the addition of *Pterostylis foliata* Hook.f. to the N.S.W. orchid flora. In the article he states that the record has been known for at least two years. As a consequence I was interested when I came across some N.S.W. material of this orchid in the Melbourne Herbarium. This collection consisted of two sheets containing three well preserved specimens collected by Charles French in 1886.
The first sheet contains two specimens and is marked "Upper Murray, N.S.W. C. French 1886". The term "Upper Murray" is somewhat vague, however Jim Willis tells me that French collected in the Upper Murray region in the vicinity of Walwa and Tintaldra. Whether these specimens came from the N.S.W. side of these towns, or further east, is speculative. Both specimens are well pressed and easily recognisable as *Pterostylis foliata*.
The second sheet contains a solitary, fairly well pressed specimen and is marked "near the base of Mt. Kosiusko, N.S.W., C. French 1886". This again is obviously *Pterostylis foliata*. These additional records indicate that the orchid is possibly fairly widespread in the highlands of south-eastern N.S.W. Blackmore's record was from Batlow which is some 40 miles from Walwa and 70 miles from Mt. Kosiusko. Much of the intervening and surrounding country is similar and could provide suitable conditions for this species. *Pterostylis foliata* however, is an enigma. Despite its widespread distribution it is uncommonly collected so perhaps one should not speculate too much on its possible distribution.

David L. Jones, 2 Kathleen Close, Bayswater, Vic. 3153.

A.N.O.S. GROUP NEWS - VICTORIAN GROUP. Bulletin Vol. 3. No. 7.

Cultivation of Lord Howe Island Orchids In Melbourne. - David L. Jones.

In the last Bulletin, Ernest Lortz gave us an exciting insight into the natural growing conditions of Lord Howe Island orchids. All of these can be easily cultivated here in Melbourne, although my experience with a couple of them is fairly limited. The 5 epiphytes referred to are - *Dendrobium moorei* (endemic), *D. gracilicaule* var. *howeanum* (endemic), *Plectorrhiza erecta* (endemic), *Bulbophyllum tuberculatum* (also N.Z.) and *B. pygmaeum* (also N.Z.). All can be successfully grown down here with only the protection of a cool glasshouse.

The Australasian Native Orchid Society.

Statement of Receipts and Payments.

GENERAL ACCOUNT

	1970/71	1969/70		1970/71	1969/70
	$	$		$	$
To Membership subs.	557.75	567.75	By Print. & Stat.	64.18	33.69
Bank Interest	81.08	55.64	Affiliation Fee	5.00	20.75
Flasking Receipts	10.00	41.00	Exps. 6th W.O.C.	-	65.84
			Petty Cash Expend. & Postage	133.46	111.01
Prize Money	8.00		Prizes	12.20	14.20
Surplus "Orchids in Colour."	71.11		Advertising	51.00	15.00
			Newsletter Exps.	-	51.02
			Sundries	23.00	23.00
			Flasking Refund	51.00	
			Typewriter	285.00	
			Typewriter Mtce.	60.50	
			Excess of Receipts Over Payments	42.60	329.88
	727.94	664.39		727.94	664.39

PUBLICATION FUND ACCOUNT

	1970/71	1969/70		1970/71	1969/70
To Members subs.	558.75	568.75	By Printing etc. (Vol.3 No.9 to Vol.3 No.11)	511.00	972.57
Donations	22.60	31.60	Folders & Envelopes	-	116.63
Sundry Sales	47.56	33.50	Binding Charges	104.25	136.50
Binding & Sale of bound "Orchadians"	101.40	228.70	Back Issues	-	100.00
Excess of Payments over Receipts	-	621.58	Petty Cash Expendit. & Post. & Mailing Expenses	110.14	158.43
			Excess of Receipts over Payments	4.92	-
	730.31	1484.13		730.31	1484.13

RESEARCH FUND

	1970/71	1969/70		1970/71	1969/70
To balance carried fwd. from previous year	1438.48	1316.57	Postage	6.00	5.59
Sale of Sarcanthinae Publication	65.05	127.50	Balance carried forward	1497.53	1438.48
	1503.53	1444.07		1503.53	1444.07

STATEMENT OF FUNDS.

		1970/71		1969/70
		$		$
Balance at Bank at 30th June		1631.24		1524.67
Comprising				
Balance on Research Fund		1497.53		1438.48
Credit in General Fund	2338.54		2295.94	
Debit in Publication Fund	2204.83	133.71	2209.75	86.19
Available Funds		1631.24		1524.67

F. Wakeley A.A.S.A.
A.C.I.S.
E. Marygold.

IVS

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DEATH OF PATRON.

It is with regret that your Council informs you of the death of our Patron Sir John Hall Best on the 1st. March 1972.
Sir John, a man of tremendous energy and organising ability was foremost in the planning & organisation of the Australian Orchid Council, the national organisation representing the Australian State Orchid Society's. At the time of his death he was also Patron of that Council. His vision was largely responsible for the Australian Orchid Council and the Orchid Society of N.S.W. applying for the 6th. World Orchid Conference.
His personal charm will be sadly missed by all orchid lovers who were fortunate in having known him
On behalf of the Australasian Native Orchid Society members we extend our deepest sympathy to Lady Hall Best and her family in their loss.

ELECTION OF NEW PATRON.

Following the death of Sir John Hall Best, your Council as faced with the task of selecting from amongst our foremost Australian native orchid experts, a man pre-eminent in his field, to become our Patron. In keeping with the 'Australasian' flavour of our Society. it was decided to ask Mr. James H. Willis, late Assistant Government Botanist in Victoria, to accept the position.
I am happy to be able to report that Mr. Willis has done us the honour of becoming our new Patron. He is very well known to a large number of our members and is one of Australia's foremost taxonomic botanists and has published several books. His "Handbook to Plants in Victoria", with its large section on the orchids of the area is a must for all native orchid lovers.

DEATH OF Dr. Keith Kirkland.

The death occurred on the 24th. October 1971, of Dr. Keith L.H. Kirkland, urologist and former olympic swimmer.
Keith had been prominent in orchid circles for many years and one of Australia's most consistent prize winning Cymbidium clones, Cymbidium Girrahween 'Enid' was named after his wife. Members will remember that he read a paper on Australian native orchids at the 5th. World Orchid Conference on behalf of our Society. He had just seen the culmination of his efforts as Chairman of the Working Committee of the 6th. W.O.C. with the publication of the Proceedings of the 6th. W.O.C. prior to his untimely passing. To his wife and daughters we extend sincere sympathy.

Dendrobium finisterrae Schltr.

V.A. Chadim

Dendrobium finisterrae belongs to the *Latourea* section and is commonly mistaken for its closest relative, *Dendrobium macrophyllum* A. Rich. Unlike other Latoureas it is very widely distributed in Papua and New Guinea, and I would not be surprised if most recorded findings of *D. macrophyllum* A.Rich. from this area proved to be *D. finisterrae* on closer and more critical examination. Although Schlechter's type specimen came from an altitude of 2,700 ft., *D. finisterrae* is really a highlands plant, growing mainly at 5,000 - 6,000 ft. or higher. It is not a pretty species, having coarse flowers with disproportionately large mentum and indistinct, dirty colouring. All floral parts point more or less forward and never open widely, the dorsal sepal is held in its position quite firmly because of its concave shape, which can be clearly seen in the drawing of the cross-section of the flower. Two main distinguishing marks are a prominent callus and an appendage below the middle of the column foot. This is not found in *D. macrophyllum*, the original drawing of which fortunately shows a detail of the column.

Schlechter also described a variety *polystictum*, which has a slightly more intensive colouring and narrower petals. I think it would have been better if he had accepted these differences as an inevitable variability - after all, what will we call a specimen with narrow petals and washed-out colouring or wider petals and stronger colours ?

Sepals are triangular, yellow-green, outside very hairy, spotted purple brown. Spots on hairs also. Dorsal sepal is 30 mm. long, laterals 33 mm. The width at base is 12 mm., extended to 17 mm. on the laterals which form a conspicuous 15 mm. long mentum. Petals are yellowish, rhomboid, 24 mm. long, 4 mm. wide at base, widening to about 11 mm. The widest part is about 9 mm. from the pointed tip. Large overlapping purple spots along the axis of the narrow part, on the outside only. Labellum three lobed, 30 mm. long, yellow-green to olive green, except for the base, which is white. Dark purple spots on the outside, faded purple branching lines on the inner surface, becoming more distinct near the edges of the midlobe. Centre lobe is 25 mm. wide, (9 mm. in the narrowest part), 19 mm. long from the tip to the base of the callus. Lateral lobes form a large funnel 24 mm. long, 10 mm. wide and 17 mm. tall. Very large white callus with 3 ridges, 15 mm. long, raised 7 mm. above the surface of the labellum, connected with the side lobes by one ½ tooth on each side. Column white with purple markings and an appendage. Five white horns protruding forward past the front surface of the yellow-green anther, 4 mm. across. Ovary very hairy.

REFERENCES:

1. R. Schlechter; Die Orchidaceen von Deutsch-Neu-Guinea, p.495.
   p. 495-496 (*D. finisterrae* Schltr. var. *polystictum* Schltr.)
2. R. Schlechter; Figuren-Atlas zu den Orchidaceen von Deutsch-Neu-Guinea, Table 168. fig 626.
   var. *polystictum* Schltr.: Table 167, fig. 627.
3. V.A. Chadim; Australian Orchid Review, Vol. 29, No. 1, p. 31-32.
4. V.A. Chadim; The Orchadian, Vol. 4. No. 2.

V.A. Chadim, 8 Parker Street, Curtin, A.C.T., 2605.

Dendrobium finisterrae Schltr.

N.H.S. Howcroft

In New Guinea and adjacent islands, the *Latourea* section of the genus Dendrobium is represented by several species with unusual and beautiful flowers.

The accompanying illustration in conjunction with Mr. V.A. Chadim's article and flower description, shows a flowering plant of *Dendrobium finisterrae* Schltr., one of the unusual *Latourea* Dendrobiums from the New Guinea Highlands.

The plant is epiphytic and grows in small to moderately large clumps in the exposed sections of the trunks and upper crowns of forest trees.

Illustration "A" shows a small plant in bloom, the stems are club shaped, the older stems are often deeply ridged ; adult plants are 35 - 50 cm. in height and might possibly be larger. The stems are dull brown and new stems are usually a shiny olive green encased in sheathing bracts which catch rainwater and dew from the evening and early morning mists. The sheaths deteriorate with age and rot, leaving only pieces of sheath ribs attached to the nodes of the thin lower sections of the stems.

The leaves are large, 15 - 20 x 7 - 10 cm. ovate, and in sets of two or three and occasionally five, at the apical section of the stems. Dark green on the upper surface, they sometimes have a slight tinge of purple on the underside.

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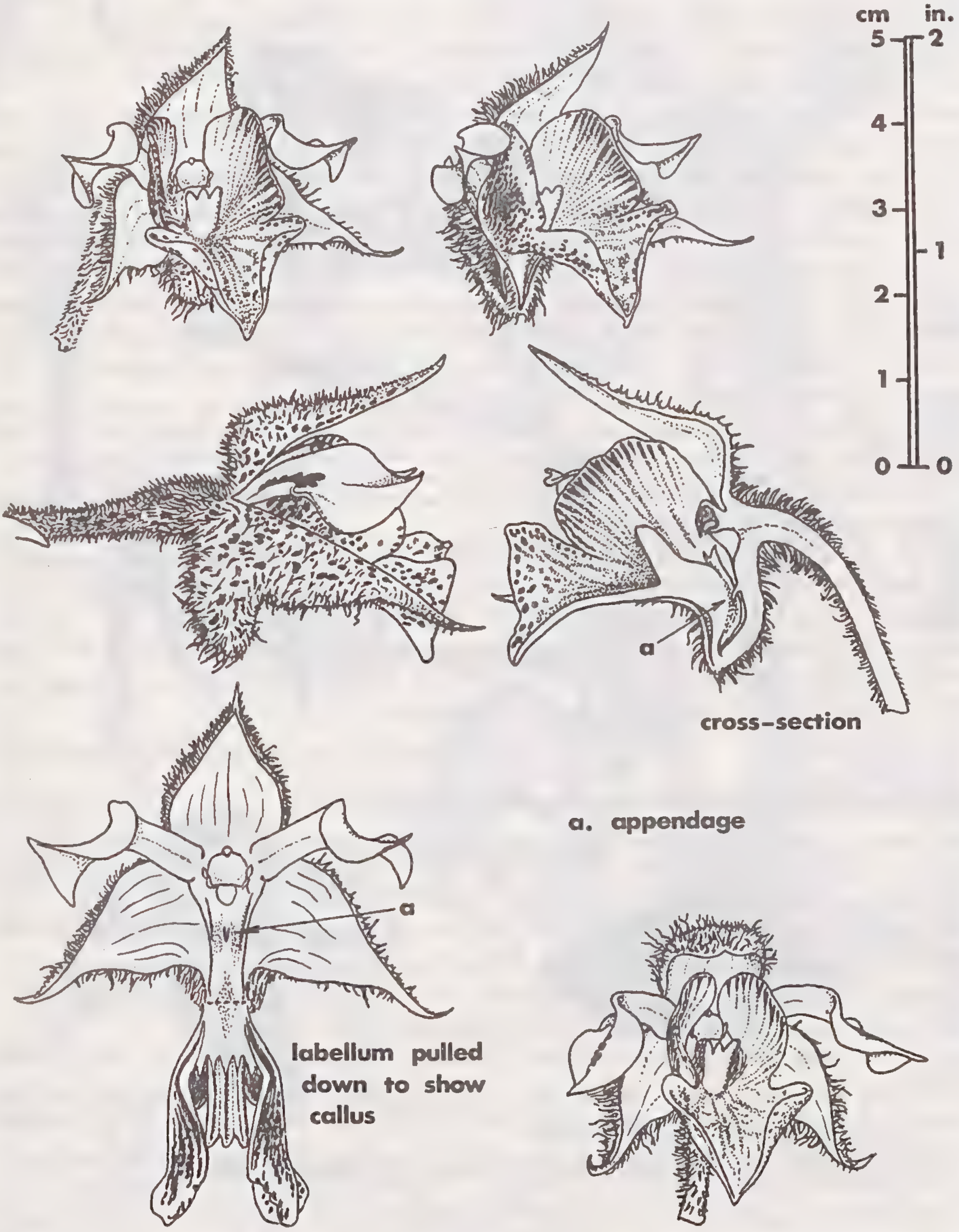
Dendrobium finisterrae Schltr. cont.



DENDROBIUM FINISTERRAE SCHLTR.

Dendrobium finisterrae Schltr. cont.

The large hairy flowers have a prominent, large, deep, labellum and a large, white callus, as seen in Mr. Chadim's excellent drawings. The colour of fresh flowers is a dirty yellow-brown with purple blotches on the external surface of the sepals. The petals are white with external purple spots; older flowers become browner with age. At higher altitudes the flowers apparently remain on the spike for a long time before dying.
The racemes examined were up to 20 cm. long and have a glabrous surface; each flower was accompanied by a hairless bract at the base of the pedicel. The peduncles were usually slightly shorter than the rhachis. The rhachis examined bore from five to ten large flowers, but, it is possible that some specimens produce slightly more than this number.
The author's first encounter with this species in flower was in the garden of Mr. John Lowien, of Mt. Hagen, in October, 1970. Another large specimen was examined at the Forestry Department's nature strip at Korn Farm Forestry extension nursery, just outside Mt. Hagen. In all cases the most prominent feature of the flowers were the large, deep labella and the large white callus on the lip.
Mr. Lowien, who is interested in preservation and cultivation of native plants, introduced this plant from a logged out area of Northofagus forest located outside Mt. Hagen's town area, at an altitude close to 7,000' asl. Mt. Hagen itself, is a little over 5,000' asl. Other plants examined of this species came from Wabag, Wapenamunda and Mingende, all in the Western Highlands District.
In January, 1971, several plants collected in the Western Highlands by the Rev. R. Collins and Mr. Bruce Gray, both of Atherton, Queensland, were given to the author; one of these plants had large hairy flower buds which were later used for the present illustration; several other plants had dying flowers and a number of large pods covered in coarse pustules terminating in flat hairs. The pustules and hairs originated from the dense mass of hairs on the pedicel of the flower.
Although no flowering specimens have come to hand from the surrounding mountain regions of Bulolo, Wau and Mumeng, there have been reports of four Latourea species from the Wageo area outside Mumeng and the description of three of these fit. Dendrobium forbesii Ridl., D. polysema Schltr. and D. finisterrae Schltr. all of which without flowers, bear some resemblance to each other in shape and size.
At present the author's specimens of Dendrobium finisterrae Schltr. at Bulolo, are producing new growths, these commenced in August, 1970 and are still developing.
As a species, this orchid is worthy of a place in collections; because of its large labellum it would be most valuable as a parent of future hybrids.

N.H.S. Howcroft, C/- Forest Office, Bulolo. TPNG.

THE SELF POLLINATION OF PRASOPHYLLUM BEAUGLEHOLEI W.H. Nich.

D.L. Jones

In this paper I will establish that Prasophyllum beaugleholei W.H. Nicholls is a self pollinating species. I think that this will be the first report of autogamy in the genus Prasophyllum, section Micranthum, although field observations suggest othere may adopt the same procedure e.g. Prasophyllum aureoviride H.M.R. Rupp.
For those who may not be familiar with the features of Prasophyllum beaugleholei it has been well delineated by Nicholls in Orchids of Australia 158 (1969).
I am indebted to Mr. Collin Woolcock of Portland, for my specimens of Prasophyllum beaugleholei. It was while I was dissecting one of these to draw, that I first became convinced that the species is self pollinating. I have since verified this process on specimens from Wulgulmerang in north eastern Victoria.
My reasons for concluding that the species is self pollinating are based on the following observations -
1) The flowers are short lived, only lasting 2 - 3 days. In other species which are insect pollinated e.g. P. morrisii, P. despectans, each flower may last up to 10 days depending on whether it is pollinated or not.
2) The pollinia are granular without much coherence and the individual grains separate easily even while in bud.
3) The attachment of the majority of the pollen grains to the short caudicle is very weak. Only a few basal pollen grains are strongly attached and it seems as if the others are quite free, or haphazardly joined into small groups.

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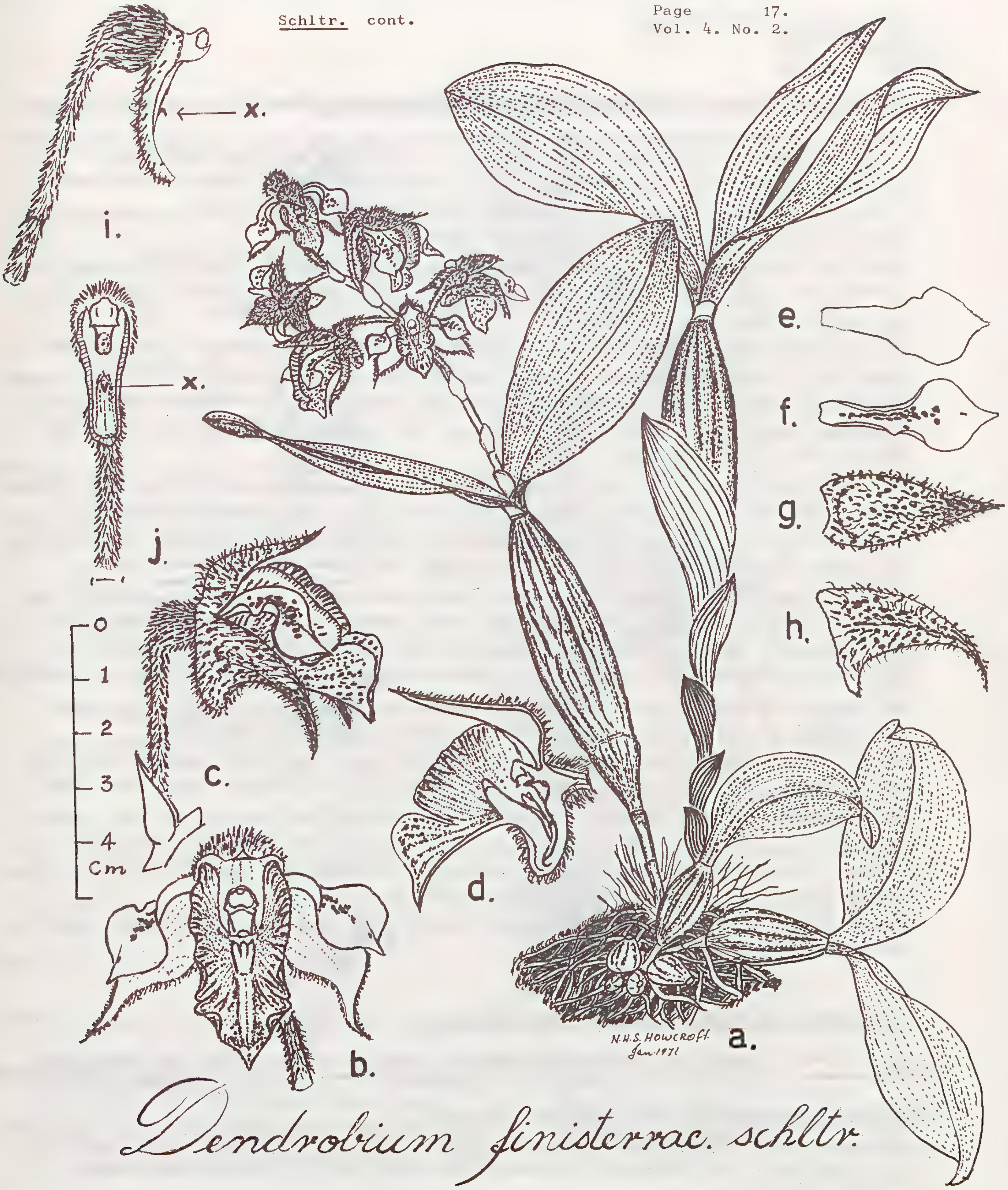
Dendrobium finisterrae

Schltr. cont.



KEY TO PLATE - Dendrobium finisterrae Schltr.

a) Flowering plant - to scale reduced 2½X
b) Front view of flower - to scale nat. size
c) Lateral view of flower to scale nat. size
d) Cross section of flower to scale nat. size
e) Petal to scale natural size
f) Petal, external view to scale nat. size
g) Dorsal sepal to scale natural size
h) Lateral sepal to scale natural size
i) Lateral view of stripped flower showing column & anther cap & appendage or small tooth x
j) Ventral view of stripped flower showing anther cap & appendage or small tooth x

The Self Pollination Of Prasophyllum beaugleholei W.H. Nich. cont.

4) The gland where the caudicle joins the rostellum appears to lack any cement. This cement or glue is essential to attach the pollinarium to the insect for cross pollination.
5) All of the ovaries on my plants have swollen and contain seed. Generally with insect pollinated species, few, if any, ovaries on each plant become fertilised.
6) The final reason is a poor one, but worth mentioning. No insect activity around the flowers has been observed by the author, or reported previously.

The mechanism adopted by the orchid can be seen from the accompanying drawings.

In the very early bud, the column is erect and the anther, containing the pale pollen, is closed. The rostellum lies close to the anther and is inclined at an angle of about 60°. The stigma is quite small and dry. At this stage there is no indication of the method of pollination adopted by the species.

The first signs that the species may be self pollinating become evident in the bud about two days before opening. The column is still erect and the anther closed. However the rostellum has moved away from the anther, and the caudicle and pollinia can be clearly seen. The pollinia are now quite orange and even at this early stage the individual grains are evident. They do not give the appearance of a coherent mass, but rather, a collection of individual grains rather poorly joined together. The stigma is beginning to enlarge and appears moist, but not sticky.

In the open flower, a number of further changes have taken place. The anther is now inclined forward and the anther sacs are open wide. The pollinia rest completely on the upper surface of the rostellum and the anther sacs are empty except for a few adhering grains. The rostellum has moved further down and is inclined at an angle of 45°, or less. Any semblance of uniformity in the pollinia is rapidly being lost and the first few grains can be seen on the stigma. The stigma itself has enlarged greatly and is now obviously very sticky. The major act of pollination takes place over the 2 - 3 days while the flower is open.

In the finished flower, about 3 days after closing, the column is hardly recognisable. The stigma is swollen out of all proportion and almost completely hides the rostellum. Its surface is very distorted and sticky and the remains of any pollen grains are barely distinguishable. Only a few odd grains remain on the upper surface of the rostellum or adhering to the anther sacs. The ovary is beginning to swell and stick out from the flowering stem.

This then is the method of self pollination adopted by Prasophyllum beaugleholei. These observations are interesting and they raise a couple of important questions.

The movement of the rostellum relative to the anther, and the opening of the anther case serves to bring the pollinia into a position directly above the stigma. However, does the pollen actually drop onto the stigma, or does the stigma grow to meet the pollen ? Both methods have previously been reported in autogamous orchids.

The incoherent nature of the pollinia and the narrow rostellum, both suggest that pollen "bubbles over" onto the stigma. As well, a few grains can often be seen on the stigma when the flowers are open. On the other hand, the rapid growth of the stigma suggests that it grows to meet the pollen grains still sitting on the rostellum. The grains that fall may only be strays that act as a catalyst ofr its growth.

The big question that self pollinating orchids always bring up in my mind is "Why do the flowers bother to open at all ? The answer appears to be hidden somewhere in the realms of evolution.

David L. Jones

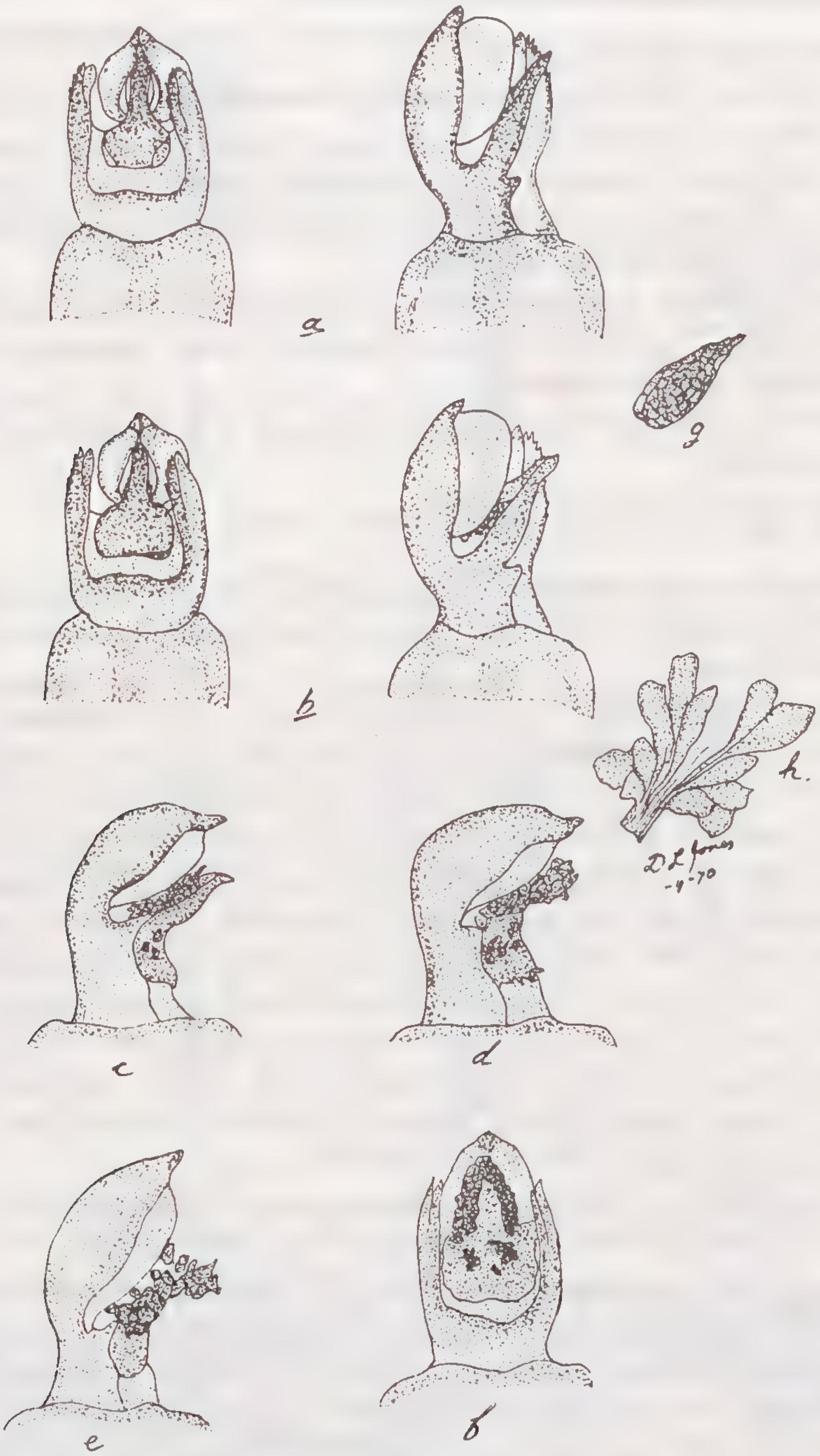
A NEW SPECIES OF PTEROSTYLIS FROM NORTH QUEENSLAND.

S.C. Clemesha & B. Gray

In this paper Pterostylis stricta Clemesha et B. Gray, is described as a new species and comparisons between it and P. curta R.Br., P. hildae Nicholls, and P. acuminata R.Br. follow.

Pterostylis stricta Clemesha et B. Gray spec. nov.
Planta affinis Pterostyli curtae R.Br. sed ab ea differens foliis minoribus, plus numerosis, manifeste nervatis, marginibus crenulatis; habitu erectiusculo; petalis angustioribus et plus acuminatis; sinu angustiore sepalorum lateralium; labello lanceolato non torto, columnā valde curva.
Planta gracilis 12 - 20 cm. alta. Folia 4 - 6 oblonga ovata basi rosulata 1.3 - 4.5 cm.

The Self Pollination Of Prasophyllum beaugleholei W.H. Nich. cont.



SEQUENCE OF SELF POLLINATION IN PRASOPHYLLUM BEAUGLEHOLEI

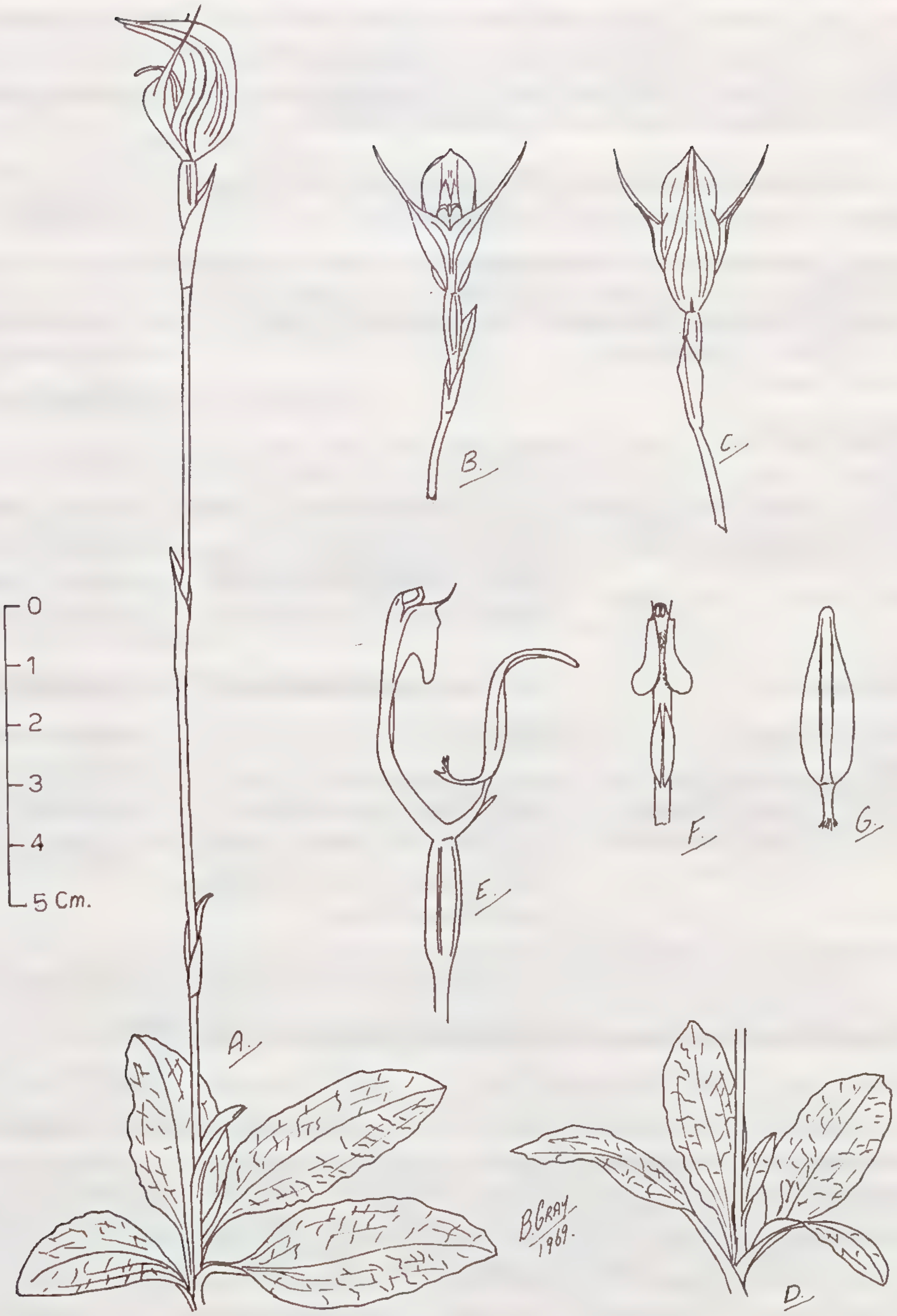
a) Columns from an early bud..............20X
b) Columns from a bud about 2 days before opening..................................20X
c) Column from a freshly opened flower....20X
d) Column from a flower opened 2 days.....20X
e,f) Columns from a finished flower.......20X
g) Pollinarium from a flower about 2 days before opening................20X
h) Caudicle showing attachment of basal pollen grains..................40X

A New Species Of Pterostylis From North Queensland. cont.

longa et 9 - 16 mm. lata marginibus saepe undulatis, valde reticulata nervis. Caulis gracilis tribus bracteis vaginantibus.
Flos solitarius, erectus, viridis basin versus translucens et apicem versus modice porphyreus. Pro genere statura media.
Sepala dorsalia erecta, cucullata, concava, glabra, acuta, 2.6 cm. longa.
Petala falcata, lanceolata, acuminata et longitudine sepalo dorsali aequalia. Sepala lateralia 2.7 cm. alta basi 1/3 - 1/2 connata tum divergantia et a sinu gibboso aliquantum lato in caudas tenues descrescentia quae ad apicem galeae terminant, basi curvata supra autem recta petalis (spatio) 6 mm. separata.
Labellum prominens a fronte latereque facile visum (hoc per spatium inter et sepala lateralia) lanceolatum ubi complanatum 14 - 16 mm. x 4.5 - 5.0 mm. circa 2/3 partem longitudinis erectum tum abrupte declinatum sinum 4 - 6 cm. excedens, non tortum, porphyreum carina prominente atro-porphyrea.
Appendice incurvata et penicillata. Columna curva, 1.8 mm. alta, alis inferioribus 6 mm. x x 2.5 mm. maxima, 1 mm. minima, latitudine marginibus plus minusve ciliatis. Alae superiores 2 mm. longae filiformes.
Stigma aliquantum angustum, non conspicuum.
Florescentia: per (mensum) martium et aprilem et maium.

A plant with affinities to *P. curta* R.Br., but differing from it in its smaller, more numerous, prominently veined, crenulate edged leaves; its more erect habit; narrower, more acuminate petals; narrower sinus of the lateral sepals; its lanceolate, untwisted labellum and its more curved column.
Holotype: B. Gray, near Ravenshoe north Queensland, 15th. April, 1969. N.S.W.
A slender plant 12 - 20 cm. high. Leaves oblong ovate, 4 - 6 in basal rosette, 1.3 - 4.5 cm. long and 9 - 16 mm. broad, margins often undulate and reticulate venation prominent. Stem slender with 3 sheathing bracts. Flower single, erect, green with translucent shading towards the base and light reddish-brown towards the apex. Of medium size in the genus. Dorsal sepals erect, cucullate, concave, glabrous, acute, 2.6 cm. long. Petals falcate, lanceolate, acuminate and the same length as the dorsal sepal. Lateral sepals 2.7 cm. high, united for their basal 1/3 - 1/2 and then diverging and constricting from a rather broad gibbous sinus into thin caudae which terminate at the top of the galea, curved at the base but almost straight above and separated from the petals by a space of about 6 mm.
Labellum prominent, easily seen from the front and side (the latter through the space between the petals and lateral sepals), lanceolate when pressed flat, 14 - 16 mm. x 4.5 - 5.0 mm. erect for about 2/3 its length then abruptly curved forwards to exceed the sinus by 4 - 6 mm., untwisted, reddish-brown with a prominent darker keel. Appendage incurved and penicillate. Column curved, 1.8 mm. high, lower wings 6 mm. x 2.5 mm. at their widest point and 1 mm. broad at their widest point, margins slightly ciliate. Upper wings 2 mm. long and filiform. Stigma rather narrow and not conspicuous.
Flowering period March to May.
Distribution: Highlands of north-east Queensland above 2,500' in open forests of most ranges, e.g. Ravenshoe, Tinaroo, Bellenden Ker, ranges near Cairns. Exact distribution not yet known.
Pterostylis stricta has been known since late last century when Karsten collected specimens of it at Bellenden Ker. It was then considered to be *P. curta* R.Br. Recent authors have confused it with *P. hildae* Nicholls. Dockrill described and illustrated it as such in his Australian Indigenous Orchids, 156, 157 (1969). It is quite distinct from these as the table below shows and all north Queensland records of these species should be transferred to *P. stricta*, except a "large flowered form of *P. curta* from the Atherton Tableland" referred to by Rupp and Nicholls. This specimen is in the N.S.W. Herbarium and clearly is *P. baptistii* FitzG.
The name stricta means very straight and upright and refers to the common habit of the plant. This fact, the space between the petals and lateral sepals and the curved labellum all help to make the labellum very conspicuous and easily seen from above, either side, or from the front. This suggests that sight of the dark labellum ridge is a main means of attracting the pollinating agent.
In *P. curta* and *P. hildae* the labellum is not easily seen (except for the tip) so a different means of attracting the pollinating agent seems probable.

continued p. 22.



KEY TO PLATE - *Pterostylis stricta* Clemesha et B. Gray

a,b,c & d) To indicated scale.
e,f & g) To scale........2X.

A New Species Of Pterostylis From North Queensland. cont.

While *P. curta* and *P. hildae* in their natural habitats flower in spring and *P. stricta* flowers in autumn, the first two become autumn flowering in cultivation at Atherton and *P. stricta* becomes a spring flowerer in Sydney.
P. stricta also has affinities with *P. acuminata* R.Br., but differs from this species in its much broader labellum and shorter lateral sepals.

	P. hildae	*P. stricta*	*P. curta*
Distribution:	Common in South Eastern Qld., & extending from there through coastal N.S.W. to Kiama and Macquarie Pass N.S.W.	Confined to highland areas in tropical North Qld.	Rare and local in extreme Southern Qld.,(granite belt & Lamington National Park) through N.S.W. & Victoria to South Australia & Tasmania.
Flowering Period:	Spring	Autumn	Spring
Leaves:	3 or less, lanceolate, large dark green margins, entire veins not prominent.	4 - 6, oblong ovate, small compared to those of *P. hildae* and *P. curta*, light green, veins prominent & margins usually undulate.	3 - 6, often comparatively large & almost always larger than those of *P. stricta*, oblong obtuse, medium to light green, veins inconspicuous, margins entire.
Flower:	Slightly curved	Very straight & upright.	Slightly curved.
Sinus:	Narrowly V shaped.	Wider.	Wider still.
Labellum:	Almost straight, yellow or green with a darker central ridge, 9 - 11 mm. long with a blunt & obtuse tip.	Abruptly curved almost at right angles, reddish brown with a darker central ridge 14 - 16 mm. long, lanceolate, with a somewhat constricted tip.	Greenish brown or reddish brown about 20 mm. long, slightly curved, oblong or obtuse, with a twisted tip.

S.C. Clemesha, 18 Wesson Road, West Pennant Hills. N.S.W. 2120

Cryptanthemis slateri Rupp, A NEW RECORDING IN NEW SOUTH WALES.

Editor

Mr. Don Blaxell of the National Herbarium N.S.W. recently informed me of a new recording for this extremely rare orchid, in the Blue Mountains. For readers not familiar with this orchid I quote from "Orchids of N.S.W." by H.M.R. Rupp, p.104, "A genus at present containing only one species, and unknown beyond New South Wales. It is allied to the Western Australian *Rhizanthella* Rogers, another monotypic genus of somewhat similar habit."
This herbaceous subterranean saprophyte grows and flowers completely underground.
Found originally by Mr. Slater at Alum Mountain, Bulahdelah, in November 1931 whilst digging up specimens of *Dipodium punctatum*, the species has only been recorded from this area by Rupp and Kesteven in October 1933, and from the Lamington National Park in southern Queensland (see S.C. Clemesha's article in The Orchadian 2: 143 (1968).
The new discovery was made by Miss Baldwyn of Springwood. The specimens were in late flower when dug up during excavations for the erection of a garage on the 5th. February 1972. Unfortunately, although specimens were collected and forwarded to the National Herbarium for verification, I understand the area was immediately covered with a very large area of concrete ! And so perhaps this remarkable orchid will be lost to science for another 40 years.

RESIGNATION OF COUNCILLORS.

Mr. J. Davies has tendered his resignation as Councillor of the society due to continued ill health. Those who have known Jack will be aware that he has not enjoyed good health for some time. We trust that he will still be able to enjoy the pleasure of growing his orchids and look foreward to his regaining good health.

Mr. Doug Dawson has also tendered his resignation from Council. Doug is waiting to go into business for himself as a newsagent and as he must be able to move to any part of the state immediately the deal goes through, he has been forced to relinquish all former orchid responsibilities.

We trust that he may be fortunate enough to abtain a newsagency in an area where native orchids abound, and thus use his leisure time in following his hobby.

Council has accepted both resignations and has decided to reorganise responsibilities of the remaining Councillors to undertake all activities.

PROCEEDINGS OF THE 6th. WORLD ORCHID CONFERENCE.

Members will be interested to know that the 276 page Proceedings are still available. This book contains the full, un-abbreviated papers of all speakers at the Conference together with black & white and colour pictures of many orchids and exhibits. Stocks will exhaust shortly, so if you or your society, would like to order copies, address your orders with cheque to 6th. World Orchid Conference, 19 Allington Crescent, Elanora Heights N.S.W. 2101. Ensure that your cheque is written "6th. World Orchid Conference".

Individual copies cost $10.50 each (inc, postage) and for bulk orders of 12 copies, or more, the price drops to $6.00 each (plus postage). Get your order off now!

THE DISTRIBUTION OF ORCHID SPECIES IN AUSTRALIA.

Copies of Eric Gordon's comprehensive paper on the distribution of native orchids in Australia is still available from your Society for just 20¢ and a self addressed, stamped envelope. The eleven pages list all known valid genera and species in alphabetical order and is printed on the same expensive paper as the Proceedings of the 6th. W.O.C. in which it appears as the lead paper. Just drop a note to our Secretary with postal note or cheque and that self addressed, stamped envelope.

NUYTSIA.

No, not nuts to ya! It's the name of the bulletin of the Western Australian Herbarium. Their Vol. 1. No. 2 of 1971 contains descriptions of 4 new species of orchidaceae from W.A. and a 30 page check list of the orchidaceae of W.A. by A.S. George. It's too good to miss and as an added incentive it's free! Write to the Publication Sales Dept. of Department of Agriculture of Western Australia.

VICTORIAN NATIVE ORCHIDS by Miss C.E. Gray.

I understand that Miss Gray has just published a new revised edition of her small book on the orchids of Victoria. It's small in size and just right to carry in the field as a reference source. Unfortunately no further information is available. I hope we can review it for you in the next issue, that is, providing the publishers are generous with a review copy.

GROUP NEWS - VICTORIA

Extracted from the Victorian Group Bulletin, March 1972. " Surplus Tuber Bank. Business continues to increase. This year almost 900 tubers found new homes. Orders came from as far afield as Sydney and Tasmania. Sorry for the delay but quite a few species were not available until early January. A change will be made in the system next season which may streamline things a little. Best of luck with them, and if there are any queries a short note will produce a prompt reply. Orders for Spiranthes sinensis are being held as the plants are still flowering. There will not be enough to go round unfortunately so some will miss out this year. Excess of some species, e.g., Pterostylis nutans has been sent to the Queensland Native Orchid Society as thanks for the box of epiphytes which they sent last November. Apparently they have trouble with terrestrials, presumably because of high pot temperatures. However, they now have several species (Thelymitra spp. from Creswick) which may be easier than Pterostylids."

OBSERVATIONS ON EPIPHYTES IN NEW SOUTH WALES.

David L. Jones

Being humble Victorians and unused to seeing many species of epiphyte in the field, I thought that a few observations on a recent trip to N.S.W. might be worth recording. The trip in question started on Saturday, October 6th., in typical Melbourne winter weather - cold south-westerly winds and driving rain. Similar conditions prevailed for 600 miles of the drive, so we did very little collecting on the way and drove straight through. All later collecting was done in the company of my brother Peter and we used his house at Caringbah as a base for our forays. Our activities extended as far north as Taree and west to the Blue Mountains.

On our way home we observed extensively on the whole trip down the east coast.

Alum Mountain is mentioned frequently through the article and a word of explanation may help at this stage. Alum Mountain is situated near Bulahdelah, 165 miles north of Sydney. It is an ugly rugged peak of flint or chert. The lower slopes are gentle and densely forested, while the upper cliff faces are sparsely clad with shrubs or stunted trees. The rock forming the peak is very crumbly and evidence of large rock slides is common. As a direct result there is a treacherous scree slope between the forested area and the cliff faces - a slope which defies rapid, safe navigation. The epiphytes are on the cliff faces and of course, to see these growing one must negotiate the scree slope.

I think it will be best if I deal with each species we encountered and our impressions as they came to us at the time.

Dendrobium speciosum: It is fitting to start with one of the best known Australian species. We first found it on easterly facing sandstone boulders at Port Hacking, Caringbah. The plants were only a few yards from the sea and exposed to severe salty winds. However, they were obviously quite happy and had flowered well. The species was also noted on sandstone cliffs and boulders in the Royal National Park, on huge cliff faces of flint or chert at Alum Mountain, Bulahdelah, and on porphory at Green Cape in the south-east of the state. In the Royal National Park, many plants had been scorched and burnt in bushfires the previous summer, but, it was encouraging to note the large number of seedlings that were springing up to replace them. A Alum Mountain some of the plants were of tremendous size. Here they were perched high on the cliffs facing west, with very little protection from the scorching sun. The leaves were tough, a bleached yellow in colour and the pseudobulbs wrinkled and bronzed. At Green Cape the species was perched on small rock outcrops on the ridges overlooking Lake Womboyn and the Pacific Ocean. They were well protected by a thick growth of Callitris and Eucalyptus but were exposed to the sea winds. The pseudobulbs were thick, the white fibrous bark persisting even on older stems and the leaves were a lush green. The depradations of Wallaby's were very obvious - racemes, new shoots and leaves had been heavily browsed. No important difference between any of the forms was noted.

Dendrobium kingianum: We only found this species on the rugged cliffs of Alum Mountain at Bulahdelah. It was there in abundance, tucked in crevices or hanging precariously on cliffs. The plants were in full bloom and I was struck by the uniformity at this locality. We examined hundreds of flowers but saw very little colour variation and no difference in morphology. The growth of the plants was also very uniform, the pseudobulbs being short, 4 - 6" long. No aerial growths were seen on any plants. In all it is a very neat form. The clumps could be readily discerned on the rocks by their dark green appearance. This was in contrast to D. speciosum which bleached readily with the sun. However D. kingianum showed little tendency to become bleached and was always a healthy green. Seedlings were quite common and in places the ground was littered with pieces that had been dislodged by treacherous rock falls. At one spot we came across a clump thriving in the fork of an Angophora. It had apparently lodged there after a fall and had continued growing quite happily.

Dendrobium pugioniforme: This species was represented by a solitary, rather stunted plant, found at Alum Mountain. It was growing on a very steep cliff near some D. speciosum and had its roots amongst leaf litter in a crevice. The plant was very bleached and tough looking and obviously clinging tenaciously to life. It was bad luck that we did not see more of this species, especially growing under good conditions. Later in the trip Brian Whitehead told us of some large clumps on rocks in the Macquarie Pass but unfortunately we did not have time to visit them.

Dendrobium linguiforme: This was one of the most common epiphytes seen. We noted it first on sandstone cliffs overlooking Port Hacking at Caringbah, then again on sandstone in the Royal National Park and overlooking the Woronora River. It was also seen on the flint cliffs of Alum Mountain, and on Melaleuca and Casuarina spp. between Forster and Taree.

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NS

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DENDROBIUM MACROPHYLLUM A. Rich.

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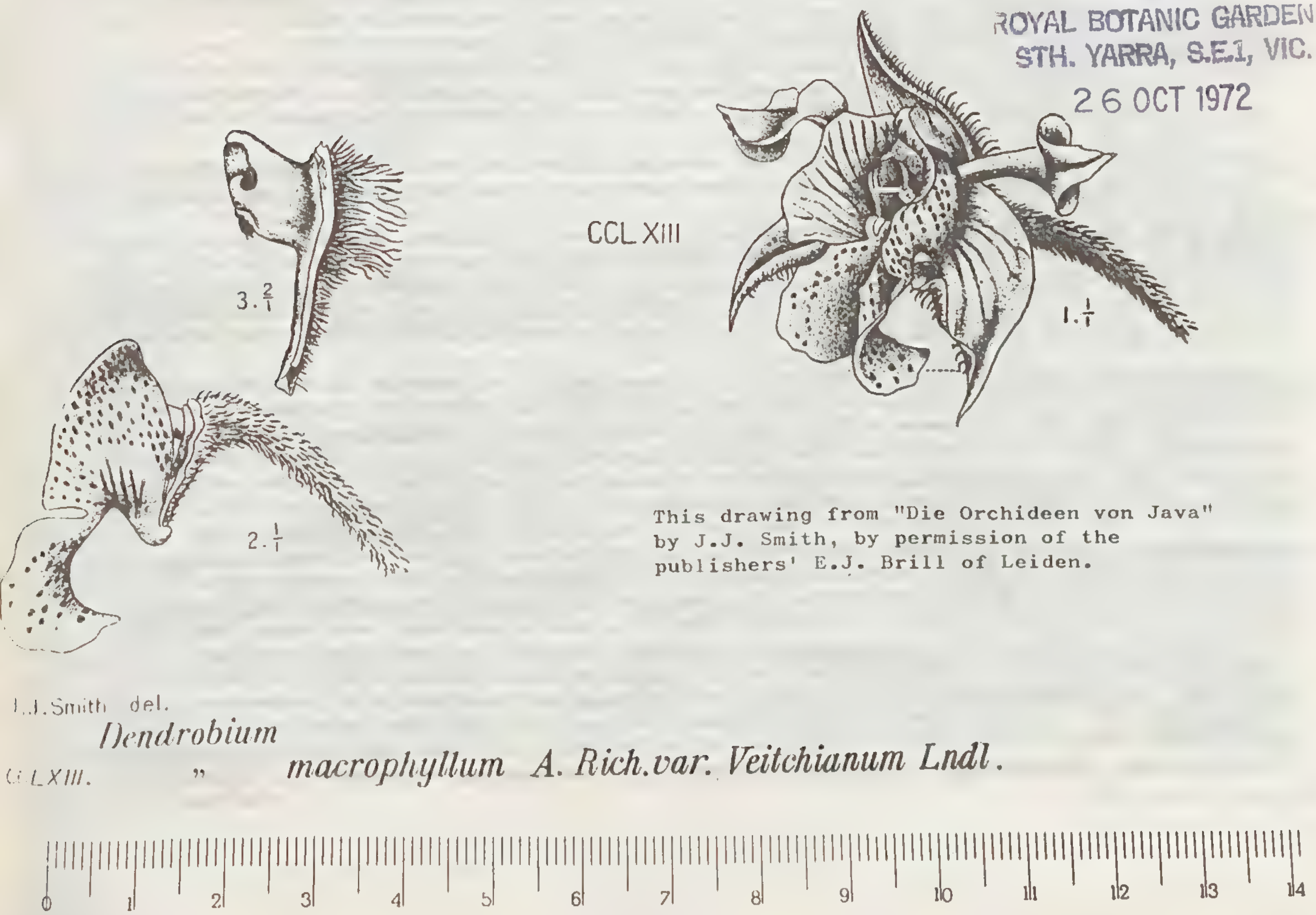

This drawing from "Die Orchideen von Java" by J.J. Smith, by permission of the publishers' E.J. Brill of Leiden.

DENDROBIUM MACROPHYLLUM A.Rich.

V.A. Chadim

When the *Latourea* section of the genus *Dendrobium* is mentioned, *D. macrophyllum* comes to mind immediately as the most typical example and it seems that no discussion or article would be complete without it. The species is assumed to be abundant in New Guinea and several remarkable crosses are claimed to have it as a parent, yet *D. macrophyllum*, or at least its type form, is virtually unknown. There is a widespread tendency to give this name to any hairy *Latourea* found.

Some New Guinea orchids, e.g. *D. polysema* Schltr., seem to grow in large numbers in small, isolated and widely separated areas of a few square miles and are exceedingly rare elsewhere, so obviously the best clue to the identity of *D. macrophyllum* could be found by tracing the origin of the type specimen, collected during the discovery voyage of the corvette "L' Astrolabe".

Unlike that of other species collected on this trip, the location of the find of *D. macrophyllum* is rather poorly defined (by a vague remark "grows in the forests of New Guinea") so I had to follow the corvette's zig-zag track on the old navigation charts to get more details. Careful examination of the daily fixes and of the distances covered excludes any possibility of an unrecorded landing in the New Guinea area outside the two places mentioned in (1) as Port Carteret and Port Doeri. The first is now called Lamassa, on Lamassa Island, 14.5 miles NW of Cape St. George, and since this is quite clearly referred to as "New Ireland" by capt. D'Urville, the next stop is without any doubt the only stop in New Guinea, in the Western part of the Island at a place now known as Manokwari. This pinpoints the collection and very likely also the flowering of the type specimen to the period 25th August to 6th September 1927.

We can safely assume that *D. macrophyllum* is a low altitude species. Captain Dumont D'Urville described the local coastal natives as living in terror of the mountain tribes, one attack actually occurred during his stay. It is extremely unlikely that anybody would have ventured into the nearby Arfak Mountains at the time.

The French botanist Achille Richard, who described *D. macrophyllum*, did not accompany the expedition, and it appears that the drawing in (1a) was also made from the dried specimen. Neither the description nor the drawing cover adequately any details which could be used to distinguish this species from several other *Latoureas* discovered later.

It is very unfortunate that Miss L.S. Gibbs did not find *D. macrophyllum*, there are 26 pages of J.J. Smith's descriptions of orchids she collected in the vicinity of Manokwari in her book "A Contribution to the Photogeography and Flora of the Arfak Mountains" (London 1917), but no mention of *D. macrophyllum*.

Several plants collected during the 19th century in the Indonesia-Philippines area were either identified as *D. macrophyllum* or given other names and later reduced to *D. macrophyllum* A.Rich. rightly or wrongly.

Dendrobium veitchianum Ldl. was introduced in 1847 in (2) by John Lindley, who was probably unaware of Richard's species, because he used the specific epithet "macrophyllum" in 1844 for a plant which is now known as *D. anosmum* Ldl. The type specimen of *D. veitchianum* was collected in Java by Thomas Lobb and had a trilobed callus. In 1867 the species was reduced to a variety of *D. macrophyllum* by Sir J.D. Hooker, after H.G. Reichenbach had referred to it as a synonym of *D. macrophyllum* in (7) in 1861.

Dendrobium sarcostoma Teijsm. & Binnend. is a name whcih can perhaps be entirely disregarded because it has never been validly published. F.A.W. Miquel refers to the species described under this name in a Teysmann & Binnendijk's manuscript as *D. veitchianum* in (5) in 1855.

Dendrobium ferox Hsskl. was described by J.K. Hasskarl (in (6) also in 1855), who kept it separate from *D. veitchianum* on the grounds that it had a slightly bisulcate callus. J.J. Smith, who must have seen the specimen, identified it as *D. macrophyllum* in (10).

It is also very likely that some of the plants identified as *D. macrophyllum* or *D. veitchianum* do not belong here. One which is almost certain *not* to be *D. macrophyllum* is a species described in (3) by H.G. Reichenbach as *D. macrophyllum* var. *stenopterum*; I will return to it later. By the end of the 19th century the image of *Dendrobium macrophyllum* bearing the characteristics of the plants from Java was established so firmly, that J.J. Smith left the words "var. *veitchianum*" out of the name in his book "Die Orchideen von Java" (10). He returned to it later in the book of illustrations (10a) and in (11), where he expresses his opinion that it would be better to keep the Javanese plant separate as var. *veitchianum*. The drawing from (10a) is reproduced here with the kind permission of the publishers, Messrs. E.J. Brill of Leiden. It is important to note that J.J. Smith described the callus as "three-ribbed", because this may have influenced Schlechter to regard the

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Dendrobium macrophyllum A.Rich. cont.

specimen he found in New Guinea in 1807 as a new species, Dendrobium musciferum Schltr. he wrote in (14): "This species is closely related to D. macrophyllum A.Rich., and I had thought at first, that I had to identify it as such. Yet it was established that the flowers are closer together, the pedicels and ovaries are covered much denser and longer with bristle-like growths, the shape of the labellum differs significantly when it is flattened out, and the callus of the labellum is completely different."

There is no doubt as to which species Schlechter had in mind, it is easily identifiable from his drawing in (14a), but his reason for distinguishing it from D. macrophyllum are not so convincing now: I saw specimens which were hairy, and others with something that could be better described as goose-pimples than hairs, and there is a possible variety of D. musciferum growing around Port Moresby which has no hairs at all, only the surface of the ovaries, pedicels and dorsal sepals is slightly rough. The callus is one of the simplest in all Latoureas, Schlechter describes it as "oblong, short, lightly two-lobed". It is imperceptively corrugated on its upper surface, and there is a vertical groove in the frontal surface. This groove is sometimes hardly noticeable, sometimes, as in the flower obtained for me by Mr. Warner Wood from someone in Tapini, deep enough to divide the callus into two lobes. These facts correspond closely with Schlechter's drawing of D. musciferum and certainly differ from J.J. Smith's description and drawing, but it must not be forgotten that J.J. Smith did not describe the type form, but the Javanese var. veitchianum.

Schlechter may have overlooked that the original description of D. macrophyllum by Achille Richard states the following about the callus:"....rigidiusculus, planus, cristaeformis," which means rigid, plain/even/flat, crest-like, and appears to be much closer to Schlechter's than to J.J. Smith's description. Also, one cannot help noticing some similarity between the bilobed callus of the D. ferox Hsskl. = D. macrophyllum A.Rich. and the bilobed callus of D. musciferum Schltr. Added to all this is the fact that D. musciferum would really live up to the name "macrophyllum" or large-leaved, it is conspicuous by its large leaves and strong vegetative growth with big, thick and healthy-looking pseudobulbs. The type specimen of D. macrophyllum A.Rich. as depicted in (1a) had a leaf fully 13" long.

There are also 2 photographs of D. macrophyllum var. veitchianum in (17) and a good drawing by Holttum in (18), all of which show a remarkable similarity to the D. musciferum Schltr., as we know it from the Territory of Papua and New Guinea. I am not disputing J.J. Smith's determination of his Javanese plant with three-lobes callus and I am not advocating the reduction of D. musciferum Schltr. to a variety of D. macrophyllum A.Rich. at this stage. There are some differences in the shape of the labellum , and if we keep calling it Dendrobium musciferum, at least we know what we are talking about, which we cannot be sure of with D. macrophyllum, at least untill we obtain some plants from the Manokwari area.

It is however rather awkward that the only known species growing in the T.P.N.G. and having a fair chance of being a synonym of D. macrophyllum has been regarded as a distinct species for years, while two other species which cannot possibly be identical with D. macrophyllum, namely D. polysema Schltr. and D. finisterrae Schltr., had been carelessly lumped together, referred to as D. macrophyllum, and used under this name for hybridising. What bad luck for all those beautiful part-macrophyllum hybrids, that the very existence of their parent in the T.P.N.G. has yet to be proved.

Another mention and drawing of D. macrophyllum showing a strong similarity to D. musciferum appears in Kranzlin (13), together with a description of a new species, D. tomohonense Krzl., which is in turn reduced to a synonym of D. macrophyllum by Schlechter in (16) and (16a). Schlechter adds two more recordings of this species in the Celebes.

J.J. Smith records D. macrophyllum on several occasions in Nova Guinea, and describes a new variety, var. subvelutinum J.J.Sm., in which the usual hairs are shortened and transformed into a velvet-like covering.

The reason for my statement that D. polysema Schltr., is a separate species is the completely different structure of its labellum with the consistently (relatively) narrow side lobes. Kranzlin's inclusion of D. polysema in D. macrophyllum (13) was rightly and vehemently refuted by Schlechter in (16).

As for D. finisterrae Schltr., this is quite a distinct species, nobody could possibly describe it's large, conspicuous and complex callus as plain, flat, or even. I think the comparison with the two forms of calli of D. musciferum in my drawing should be convincing enough.

Dendrobium musciferum Schltr.

The flowers are scented, light green, petals white changing to yellow with age. Sepals

continued page 28.

Dendrobium macrophyllum A.Rich. cont.

fairly densely purple spotted on the outside, petals spotted in the two thirds near their base. The lateral lobes of the labellum have purple lines branching out towards the outer edge on the inside, purple spots on the outside. Centre lobe has a few purple lines and an occasional spot on the inside. The ovary is usually very hairy. Pseudobulbs are club-shaped, yellow. It should be mentioned here that this species is an extremely willing parent, it is readily fertilised by pollinia from other Latoureas or from species of the *Ceratobium* section.

The Port Moresby variety has smaller, but much prettier flowers about 3 cm. across. Rachis light green, pedicel incl. ovary 27 mm., rough but not hairy, light yellow green. Dorsal sepal triangular, acute, 18 X 10 mm., slightly rough on the outside, laterals 17 X 10 mm., recurved. All non-hairy, yellow, with 5 yellow-green veins. Mentum 9 mm. long, 4 mm. wide, white.

Petals spathulate, cuspidate, white to cream, with about 6 small brown dots near the base, 16 mm. long, 2.5 - 8.0 mm. wide.

Labellum three-lobed, laterals rhomboidal rounded, curved around the anther, 27 mm. across when flattened, with radial fold. Yellow, with reddish-brown branching radial lines inside, very few broken lines outside. The outer edge is white. Centre lobe is concave, recurved, inverse deltoid with a small acute tip, 12 mm. across when flattened, 10 mm. from base of callus to tip, yellow, with few branching dotted reddish-brown lines inside, very few random spots outside. Callus white, front surface almost entire, tip slightly bilobed, top surface with two shallow grooves, rear surface with one groove, connected with the lateral lobes of the labellum by a very lightly two-dentate ridge.

Column white, suffused purple, with a light green triangle at its foot. Anther green with white centre and lower edge, almost circular, 2.5. mm. diameter. Bracts ovate-acute, 14 X 9 mm. This seems to be a compact variety of *Dendrobium musciferum* Schltr., but I cannot be sure, because I have seen only one plant, sent to me by Mr. Warner Wood when I was living in New Guinea.

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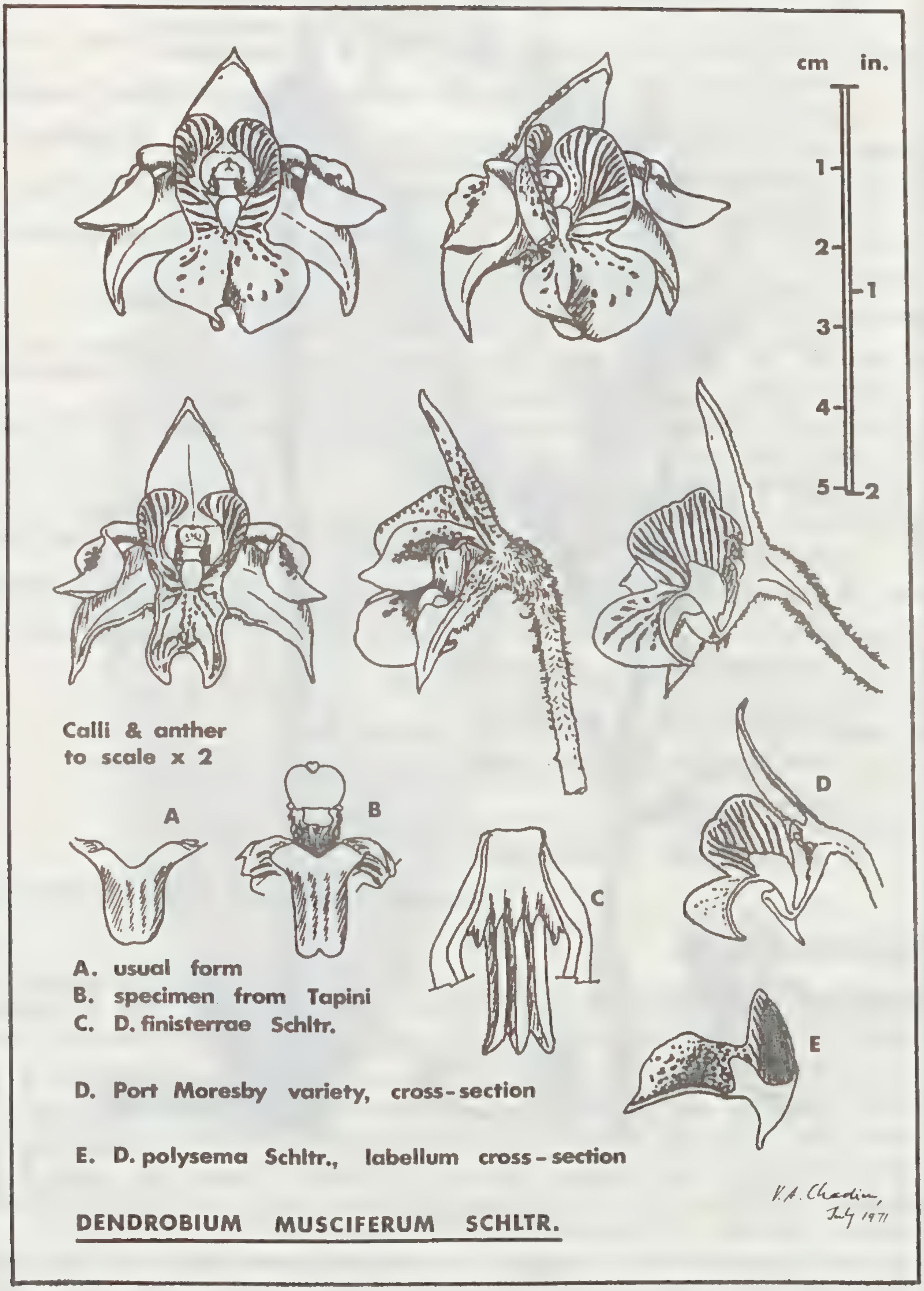
continued page 30.

Dendrobium macrophyllum A.Rich. cont.



Calli & anther to scale x 2

A. usual form
B. specimen from Tapini
C. D. finisterrae Schltr.

D. Port Moresby variety, cross-section

E. D. polysema Schltr., labellum cross-section

DENDROBIUM MUSCIFERUM SCHLTR.

V.A. Chadim,
July 1971

Dendrobium macrophyllum A.Rich. cont.

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V.A. Chadim, 8 Parker Street, Curtin, A.C.T., 2605.

PTEROSTYLIS HILDAE Nicholls.

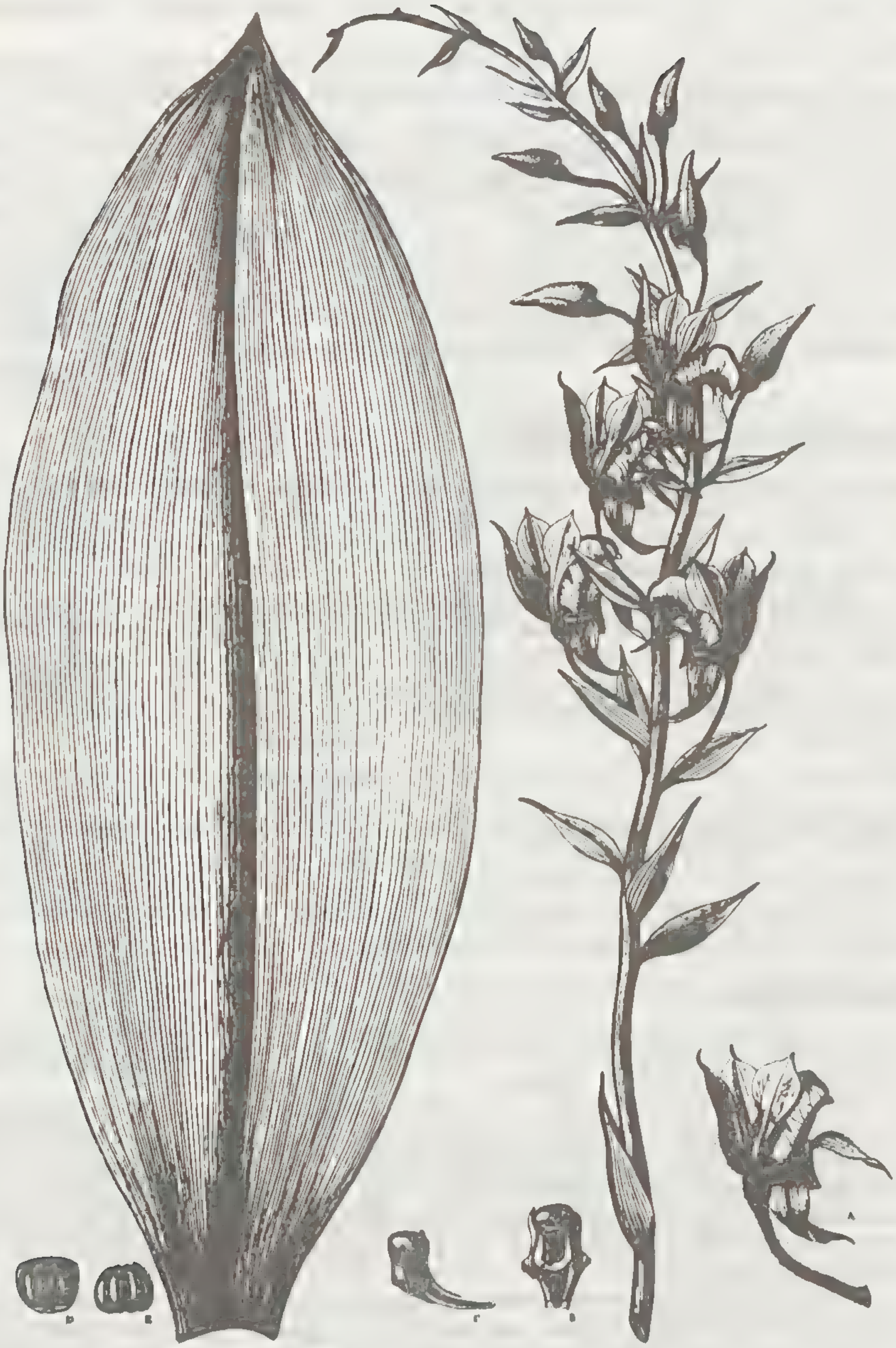
S.C. Clemesha

Though Pterostylis hildae Nicholls is abundant in south Queensland and northern New South Wales and extends to near Kiama, it was not described until 1937. This is because it has been confused with related species, particularly P. curta R.Br. and more recently with P. stricta Clemesha et B. Gray (prior to its description).
R.D. FitzGerald illustrated P. hildae in his Australian Orchids (1:5(1879)) as a probable hybrid between P. curta and P. pedunculata. Though these two species grow and flower together in many areas over their wide range, any evidence of hybrids between them is entirely lacking. Even if they were to be found, one would expect the result to be a plant very different in appearance to P. hildae. This species extends considerably beyond the range of P. curta in Queensland while this species and P. pedunculata both extend to Victoria, Tasmania and South Australia, thereby greatly exceeding the natural range of P. hildae.

P. curta has been confused with P. hildae to a greater degree than any other species which is not surprising since these two species are closely related. Though their differences are clearcut and constant, they are not always so in pressed specimens, especially where

continued page 32.

Dendrobium macrophyllum A.Rich. cont.


Voyage de l'Astrolabe – BOTANIQUE.
Sertum Astrolabii – Pl. 9.
A
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DENDROBIUM MACROPHYLLUM Nob.

Pterostylis hildae Nicholls. cont.

these are of a poor standard. Prior to 1937, almost all specimens of P. hildae were recorded as P. curta with the result that P. curta was considered to be common in south Queensland. More recent searching has shown it to be quite rare and confined to more temperate parts like the granite belt between Stanthorpe and the border of N.S.W. where many other southern terrestrials reach their northern limit, (the 'spider' Caladenias and Pterostylis woollsii for example).
P. curta does not appear to extend to the subtropical forests of south Queensland where P. hildae is so common. One writer has recently expressed the opinion that at some future date, some author may unite P. hildae and P. curta. Though at the time he was basing his opinion on the then undescribed P. stricta and was working under the difficulty of not having fresh material of P. curta and P. hildae readily available. This is because P. stricta is both geographically and seasonally isolated from its more southern relatives.
The present writer and B. Whitehead of Dapto, have found numerous colonies of P. curta and P. hildae growing side by side, scattered down a hillside, at Macquarie Pass N.S.W. Though an extensive search was made for specimens intermediate between the two, none were found and the two species are always easily separated. Areas where the two species grow together are not numerous, as P. curta favours more temperate habitats than P. hildae.

continued Vol. 4. No. 4.

SYDNEY GROUP - ANNUAL POINT SCORE COMPETITION.

Sydney Group has recently introduced two inovations to their monthly meetings which will be of interest to other members; the first, the benching at meetings of exotic orchid species, the second, an annual point score competition for members. For your interest the following is a brief resume of how the point score works.
Classes: Dendrobium, Sarcanthinae, Bulbophyllum, terrestrial, other genera.
Point Scoring: In each class - 3 exhibits or more - 1st. 3 points, 2nd. 2 points, 3rd. 1 point, plus 1 point for benching. 2 exhibits - 1st. 2 points, 2nd. 1 point, plus 1 point for benching. 1 exhibit - 1st. 1 point, plus 1 point for benching.

Prizes:	1st. in each class (highest number of points)	5 points.
	1st. in all classes	1 point.
	Most exhibits	1 point.
		7 points.

No entrance fee. No monthly prize. Annual prize only, at Christmas party.
Judging by appreciation - 2 persons selected at meeting.
Sydney Group intend appointing a 'Show Secretary' to their committee to handle the benching. For further detailed information do not hesitate to contact the Sydney Group Hon. Secretary, Jim Wlaker at 27 Stafford Road, Artarmon, N.S.W. 2065.

VICTORIAN GROUP- Bulletin Notes.

The following notes are from the Bulletin of the Victorian Group and will provide thought starters for Committee members in other Groups.
Alex Wilkie Reserve. Ray Smith visited this project recently to plant fifty Pterostylis curta in our area. He reports that some of our previous plantings have survived the bandicoots and are growing well. A gravel path has been laid and the other native plants are being labelled. For newer members, the Reserve is a small area in Springvale which is being re-constituted to its original vegetation (prior to the arrival of the white man). The whole area is fenced and only organised groups will be admitted. We are responsible for the supply and maintenance of the orchids.
A Letter ! Have any of our Members tried growing native orchids in plastic foam ? I have experimented by cutting the foam into cubes to fit into square plastic pots, inserting the orchid into a slit in the foam and then placing the lot in the plastic pot. The roots appear to enter the holes in the foam and support the plant firmly. I hope that the opposite forces of capillary attraction versus gravity will maintain the balance between the required amount of moisture and drainage.
A plastic bowl is used to soak some of last year's cow manure, and about once a week each pot is watered with a very weak solution from this. To date, I have cuttings and aerials of Dendrobium kingianum, D. striolatum, D. linguiforme and tubers of Pterostylis nutans and Pt. truncata which all appear to be growing well.

Phil Mims

NS

THE ORCHADIAN

AUGUST, 1972.
Vol. 4. No. 4.

Price: 30 cents

Published by The Australasian Native Orchid Society

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Address all correspondence to: P.O. Box C106, Clarence Street, N.S.W. 2000.
AUSTRALIA

RESIGNATION OF PRESIDENT.

Regretfully the Council has accepted the resignation of our President, Bob Napier. Bob has long been a stalwart of the Council, having been elected to the position of Hon. Secretary in July 1964, and has served you on Council ever since. He is also a Foundation Member of our Society.

Bob has found that business responsibilities now require a considerable amount of his time and as he cannot devote the necessary time to the position of President he tendered his resignation.

I am sure all Members will join Council in wishing Bob well in his future endeavours. Council has decided that a new President could not be elected before the next Annual General Meeting and intend operating with either one of the two Vice Presidents acting as Chairman for the remainder of present tenure.

RECORDS SECRETARY.

Philip Spence, well known to many of our Members has been co-opted to Council for the remainder of its term of office and has accepted the position of Records Secretary. Phil, as many of you know is a very keen grower of Australian native orchids and has made numerous collecting trips to New Guinea. His collection of New Guinea species is considered one of the best in the world. Congratulations Phil !

POSTING MONEY TO A.N.O.S.

It has recently come to our attention that numerous letters addressed to Council at our official post box have not been received. In a couple of instances missing letters were posted to us with cash (notes) enclosed. We have made an official complaint to the G.P.O. However, we must remind Members NOT to include cash payments in any mail. Use a cheque or Money Order ONLY. Our Hon. Secretary also asks that all correspondents write their name & address on the outside back of the envelope. In recent months he has received several letters without any return address and signed in an undecipherable manner. Apparently he then has some trouble in deciding from whom the letter has come !

ANNUAL GENERAL MEETING - 30th. September 1972.

To be held at 10.00 a.m. sharp in the Railway Institute, room 8, Chalmers Street, Sydney.

ANNUAL ELECTIONS.

Financial Members are advised that the closing date for Nominations will be the 6th. September 1972. Date of Election will be the 28th. September 1972. Nomination Forms will be forwarded to all financial Members as prescribed by the Constitution and its Ammendments.

MEMBERSHIP RENEWAL.

Annual subscriptions are due on the 1st. July of each year. Post your cheque or money order to the Hon. Secretary promptly please !

Pterostylis hildae Nicholls. continued from Vol.4. No. 3.

S.C. Clemesha

Pterostylis curta occurrs in areas of south Queensland near the New South Wales border, south through that state to Victoria and Tasmania, and west to the hills near Adelaide S.A. Though it is typical of coastal areas and abundant in woodlands and sandy soils, it is found in sheltered gullies near creeks in inland areas such as the Warrumbungle Range, where locally common, the Moonbi Range near Tamworth, the Mudgee district and the Grampian Mountains of Victoria.

P. hildae extends from near Kiama in N.S.W. to north of Brisbane. Its northern limit is not known, but it can be expected in and near rainforests anywhere in southern Queensland. Though it does not cross the central Queensland dry belt which has proven a barrier to many orchids. It is rare south of Newcastle, but becomes common north of that city.

The differences between the two species are set out below.

Pterostylis hildae Nicholls	Pterostylis curta R.Br.
Leaves never more than 3, ovate to lanceolate, midrib prominent and apex pointed.	Leaves usually 3 - 5, oblong elliptical, apex much blunter than in P. hildae.
Flowers slightly smaller than those of P. curta.	
Sinus of lower sepals narrower than in P. curta.	
Labellum 9 - 11 mm. long, spathulate or oblong elliptical, almost straight, tip obtuse and never twisted.	Labellum about 20 mm. long, oblong, more curved than in P. hildae, darker in colour, tip more pointed and twisted.

It may be argued that these differences are insufficient to separate two species, especially as leaf shape in Pterostylis is generally speaking, not a reliable basis for identification. This is generally true, though most collectors with moderate field experience soon can pick a wide range of Pterostylis species from the appearance of the rosette. P. hildae however is an exception. Its leaves differ considerably from the rest of the genus and prove a quick, easy guide to identification. It is unique in producing rosettes of 3 or less leaves. Only rarely do other species produce 3 leaved rosettes and one never finds a colony of plants like this. The author has made many attempts to find specimens of P. hildae with more than 3 leaves, but all without success, though numerous plants of P. hildae with only a single leaf have been found.

The twist of the labellum in P. curta has been treated with contempt by many as it sounds an inconsistant feature. The author has examined specimens of P. curta from all over its range and found the labellum twist to be an excellent feature for identification as it was present in every one of the hundreds of flowers seen. It does vary a little and is greater in some forms of P. curta than others, but in all it is very noticeably present. Some flowers open with a half twist but have the full twist within a few hours. The only other species of Pterostylis which the author knows to have a twisted labellum is P. micromega Hook.f. of New Zealand.

A short time after P. hildae was described, Rupp sent Nicholls a rather poor pressing (the only one he had available) of P. neocaledonica Schltr. questioning whether or not this species was identical with P. hildae. Nicholls in his reply stated that the specimen was not good enough to make a definite determination and P. hildae would be best treated as a valid species until better material was available from New Caledonia.

The author has examined this specimen and also another from Kew (specimens in fruit, flowers withered) and a xerox copy of 2 specimens, one in flower, the other in advanced bud, sent by the Botanical Museum of the University of Zurich and here reproduced with their permission. In all three of these specimens, differences between P. hildae and P. neocaledonica are evident. P. neocaledonica bears 2 - 4 leaves in the specimens examined and its lateral sepals have a much wider sinus than P. hildae as shown in the xerox copy. The leaves of P. neocaledonica differ considerably from those of P. hildae though very closely resemble those of P. curta. It is by no means clear that P. neocaledonica is distinct from P. curta but all specimens examined are consistently smaller than that species. The question cannot be settled until specimens are received from New Caledonia or specimens of P. curta are sent to a botanist familiar with P. neocaledonica.

At present P. curta as well as P. neocaledonica are recorded from New Caledonia but in the authors's opinion these two probably represent the one species and the correct name is yet to be determined.

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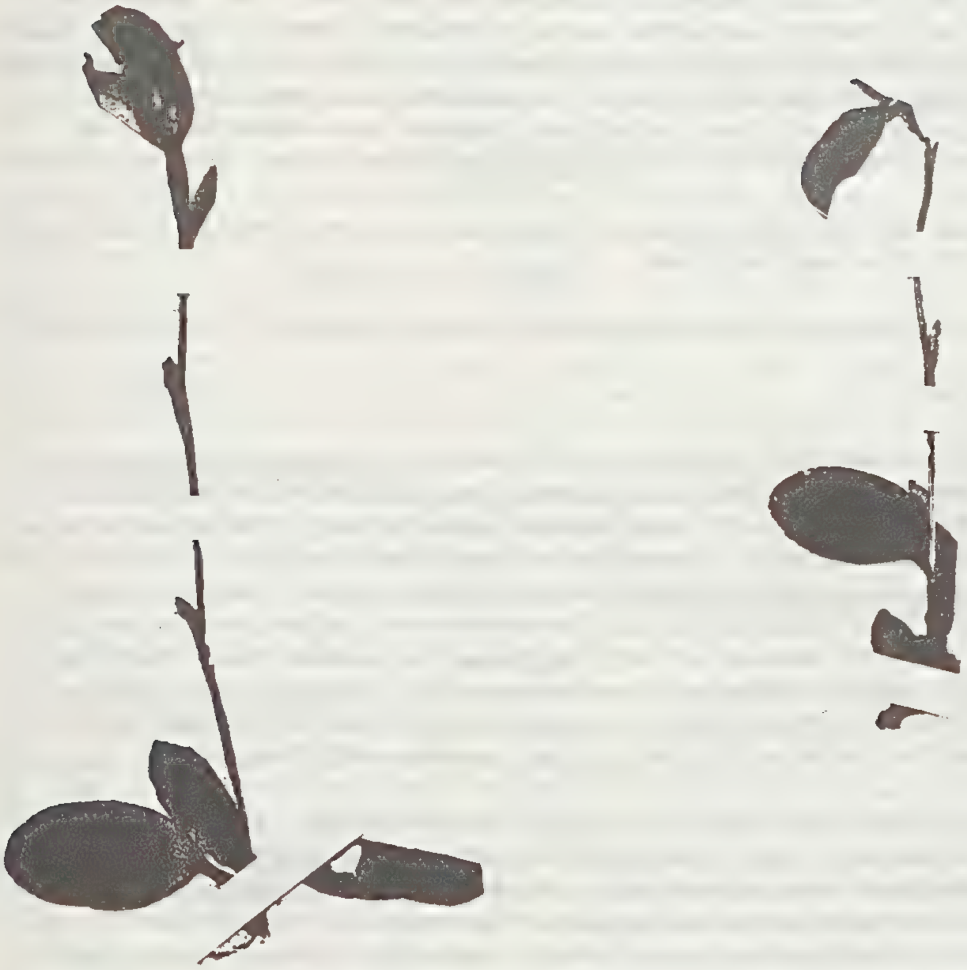
Pterostylis hildae Nicholls. cont.



Botanisches Museum der Universität Zürich.
Neukaledonien.

Pterostylis neo-caledonica Schlechter

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leg. **Dr. Fritz Sarasin.**

Pterostylis hildae Nicholls. cont.

P. hildae has also recently been confused with *P. stricta*. This appears to be the result of workers realising that this species prior to its recent publication did not fit into the description of *P. curta*. This new species however is even more distinct from *P. hildae* than it is from *P. curta*. The untwisted labellum appears to have been the cause of this confusion. *P. stricta* however, differs from *P. hildae* primarily in its more numerous smaller leaves, more prominent, larger, darker and differently shaped labellum, which is bent almost at right angles compared to the almost straight labellum of *P. hildae*. The shape of the lateral sepals differs in the two species.
For the above stated reasons, the author is of the opinion that the present recognised status of *P. hildae* i.e. as a valid species is the correct one.

S.C. Clemesha, 18 Wesson Road, West Pennant Hills. N.S.W.

OBSERVATIONS ON EPIPHYTES IN N.S.W. cont.

By far the best form was on the Casuarinas in the 'swamp oak' forests (*Casuarina glauca*). Here the clumps were large, thick and robust and the individual leaves large, deep green and hardly ribbed, certainly not 'thumbnail' type. On the rocks near Sydney the plants were much sparser and less vigorous, the leaves smaller, strongly ribbed and heavily blotched with purple-brown colourations, doubtless as a result of the sun. The plants seen around Sydney were in full bloom while those on the swamp oaks at Forster were only just showing spikes. On the Melaleucas near Taree we found dozens of strong healthy seedlings. Our last sight of this species was unforgettable. Homeward bound, we stopped to gaze in awe at the monstrous *Ficus* sp. at Fig Tree. The whole surface of its upper trunk and branches was a mass of white, *D. linguiforme* making an incredible display. The number of flowers on that tree would defy counting.

Dendrobium beckleri: Our only encounter with this species was in a stinking, putrid 'swamp oak' bog near Forster. Walking into the swamp along the ridges that connect the trees, we spied masses of *D. teretifolium* and then high up, occasional plants of *D. beckleri*. These looked quite comical with their spindly upright growing habit. The species was rather uncommon in these conditions and few big plants were seen. Most had their usual quota of small green flowers.

Dendrobium teretifolium: This orchid was first encountered just south of Taree. Indeed the specimen proved to be the biggest we saw for the trip. It was halfway up a large isolated swamp oak that was growing beside an ephemeral stream. The orchids root system covered about 2/3 the circumference of the trunk and its leaves and stems dangled down for about 8feet. Unfortunately it had finished flowering but the large number of swollen capsules testified to the efficiency of its pollinating mechanism. It must have been a beautiful sight in bloom. Apart from this magnificent specimen, we found the species common in every swamp oak colony we searched, but did not see it on any other host. In one grove the adjoining *Eucalyptus* had been cleared. The change had proved too much for the orchids near the edge and their stark yellow skeletons dangled from the trees, a mute testament to man's interference.

Dendrobium striolatum: While gazing over a well used lookout in the Blue Mountains, I noticed a familiar sight on the rocks far below - the fleshy leaves of *D. striolatum*. Then on looking further we saw the leaves everywhere, including on the rocks just below our feet. The plants were sparse, probably because of the shade, certainly not the vigorous stands we are used to in east Gippsland. Also they were often growing amongst grass, trigger plants and bushes on the sandstone ledges almost in the earth. Those of east Gippsland generally form pure stands on the large granite boulders and cliff faces. However, later stands of the species we saw in the Macquarie Pass were as vigorous as those in east Gippsland.

Dendrobium tetragonum: A cleared paddock sloping down to a creek of dense rainforest attracted our attention just south of Taree. On entering the rainforest it was obvious that all was not well. Bushes and trees were dying slowly and there were dead staghorns everywhere. These were no doubt a result of the different environment the clearing had created and it was obvious the rainforest was in for a change. Near a loop in the creek we came on an unforgettable sight. Two huge Eugenias were dead and their bark had dried and begun to crack. On this surface were dozens of plants of *D. tetragonum*, all with masses of flowers scattered along the length, and in clusters at the ends of the curious four sided pseudobulbs. It was a beautiful sight, these masses of flowers hanging over the water

continued p. 37

Observation On Epiphytes In N.S.W. cont.

emitting their delicate perfume. But even here all was not well. A close look at the plants showed many leafless pseudobulbs, a shrivelled root system and quite a few aerial growths, all indications that the plants were having a bad time. Obviously the clearing was affecting them and I think that the massed flowering we saw was the last desperate effort by doomed plants to perpetuate the species. How did they know?

In the Royal National Park Dendrobium tetragonum was quite common. It was usually found on trees hanging over the Hacking River and often in very dense shade. The leaves were always a deep green, often with crinkled, or wavy margins and the pseudobulbs full and healthy. They were growing on a variety of hosts among which we could recognise Myrtles, Eugenias and Water Gum (Tristania laurina).

Liparis reflexa: What a ubiquitous orchid this is, at least in the areas we visited. In the Royal National Park south of Sydney it was growing in rock clefts in both exposed and sheltered positions. At one locality we saw a mass of it in a very shady position near a small waterfall. Here the growth was lush and the leaves very long, succulent and a deep green. In the open, the plants were bleached yellow and the leaves greatly reduced or in severe conditions almost absent, leaving a mass of bald pseudobulbs. Some colonies had occupied the same cleft for many decades and were a dense mass of overgrown pseudobulbs. The upper layers of these were no doubt feeding on the decayed remains of their relations beneath. Plants in the Blue Mountains were often growing in soil around the bases of shrubs and small trees in the smae manner as Dendrobium striolatum mentioned earlier. On Alum Mountain the species was more or less confined to rocky defiles and crevices. The few colonies on the west facing cliffs were severely bleached and toughened.

Bulbophyllum exiguum: This was the most common Bulbophyllum seen on the trip. At the Royal National Park we found it on many trees near the Hacking River, often at considerable heights. The colonies were generally sparse but sometimes very large, At Alum Mountain it was abundant on the rocks and the best colonies were to be found in some of the deep protected defiles. Here the leaves and pseudobulbs were large and deep green, and the colonies very vigorous.

Bulbophyllum crassulifolium: This species was only seen in two places, the Royal National Park and Bulahdelah State Forest. In the former there were many sizeable colonies perched high on fairly large trees. The colonies were dense and a bright green in the shady situations. The State Forest at Bulahdelah had been badly burnt previously, but in a couple of protected areas we came across a large number of vigorous seedlings starting life on Eugenias, Tristanias and others we could not identify.

continued Vol. 4, No. 5.

SO YOU HAVE BUGS !

J. Walker

Those of you who are addicted to chlorinated hydrocarbon sprays etc., read no further. This article is strictly for the pollution conscious.

There is probably as much hysteria attached to poisons (insecticide and fungicide) as there is to insects themselves. To see a caterpiller chomping on one's prize Dendrobium kingianum or to see a "Dendrobium beetle" flitting around the bush house is usually enough to send most orchid growers into a frenzy.

Examining the subject objectively - how bad are insects? A light infestation of insects does little harm - none of it of a permanent nature. Even in a bush house there is a "balance" in the insect world - that is, until the first poison is introduced; this spray destroys predator and pest alike so that when the pests return there is no predator to check them. Then trouble starts.

These beneficial insects include -

Lacewings (Neuruptera) - Green Lacewing (Chrysopa ramburi) - Ant Lion (Acanthaclisis fundata) These delicate fly-like creatures are about 1.5 cm. long. In the adult form they wreak havoc on the aphid population. In the larvae form they are the truly terrible "aphis lion" -they may devour up to 50 insects a day, plunging their sickle shaped hypodermic jaws into their victims body and sucking them dry, the empty exo-skeleton being cast onto the aphis lion's back and worn like a coat of mail.

"Ant Lions" favour dry sandy soil where they can dig the sand traps, so though they do good work, they are of little interest to orchid growers.

Wasps (Pompilidae). Nearly all wasps are preditors. Their requirements being an insect or caterpiller large enough for them to lay their eggs on, thus providing a ready larder for the larvae.

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So You Have Bugs ! cont.

Mantids (Tenodera australasiae, Archimantis latistyla, Phthersigena conspersa and Orthodera ministralis). These well known creatures are either green or brown and up to 7 cm. long. They have voracious appetities, often resorting to cannibalism. The female will devour her mate while he satisfies her needs. The male's copulatory organs are inhibited by a nerve in the head - if the head is removed the thorax goes through the action of mating and so the species survives. A high price for love!

Lady Bird (Beetle)(Coccinellidae) For aphis destruction, these charming little beetles closely rival the "aphis Lion" q.v. They are also good destroyers of scale insects so their presence is to be encouraged. One species Rhodalia cardinalis was responsible for clearing the Californian citrus orchards of Cottony-cushion scale, back in 1889. Surely one of the first attempts at biological control. Beware of a cousin, the 28 spot beetle q.v.

The foregoing do excellent work on your behalf, so why kill them ?

Just as a dirty house attracts fleas and rats, so does a dirty bush house attract pests. If you have a bad pest problem, the first task is to clean out the bush house. Old compost, crock, leaves and weeds are the lurking ground of many problems.

Adopting the philosophy of "first know your enemy", I will briefly examine the main pests.

Aphis (Macrosiphum rosae) are usually brought in by ants who tend them and "harvest" the honey dew extrude. As aphis have poor locomotion, hosing with water will destroy them. Any reinfestation is due to new hatchlings brought in by ants.

Ants. These bring in and encourage other pests, namely aphis and scale. Apart from excavating pots they do no harm to orchid plants.

Scale. (white)(Ceroplastes destructor, plus 350 spp.) In the larvae form this is a winged insect. The "scale" is the adult female. Scale lives on the plant juices.

Red Spider. (Tetranychus spp.) This is a mite related to ticks. It lives on the underside of leaves where it appears as red spots. A bad infestation can destroy a plant. Generally likes hot, dry conditions. Life cycle varies between 7-11 days.

Moulds and Fungi. Hundreds of species all of which like still humid conditions. Most damage is to potting mixtures and buds.

Snails, Slugs and Slaters. These like to live in litter. They are the leaf, root and compost destroyers.

Mice. Very partial to new roots, shoots and buds.

Pumpkin Beetle. (Aulacophora hilaris) Dendrobium Beetle (Stethopachys formosa). Both beetles are similar in appearance - orange with 4 - 5 black spots and about 1 cm. long. These are the shoot destroyers.

Grasshoppers and Crickets. Some of these, particularly the longhorn grasshopper (Paragryllacris combusta) and the cave cricket (Anostosoma sp.) have very good jaws, resulting in new shoots and young pseudobulbs disappearing overnight. Exercise caution when handling, as both can draw blood - long nose pliers are a good weapon.

Shield Bug (Green - Nezara viridula; Flanges - Rhoecocoris australasiae; Jewel - Scutiphora rubrom aculata). There are 400 species of these revolting creatures. They live by sucking the plant juices. New growth rapidly wilts under their attack. Fortunately they are susceptible to pyrethrin. Don't squash these bugs in the bush house. Their smell in a confined space is quite unbelievable.

Caution - do not kill Assassin bugs (Opistoplatys sp. and Ptilocnemus spp.) - they're on our side !

Loop Caterpiller and Flase Loop Caterpiller (Geometridae and Plusia spp.) These creatures are green and vary between 1.5 cm. and 5 cm. dependant on species. They all have voraceous appetities, spending the day under leaves. When it reaches the chrysalis stage it often takes up residence in the top of the pseudobulb and weaves the leaves together.

Twentyeight Spot Beetle (Epilachna punctata) This is the only leaf eating lady-bird (beetle). It eats the surface of the leaf leaving only the veins.

Thrip (Thrips imaginis). Prefers the cool damp of the floor - not a big problem.

So much has been written on the "exotic poisons" that I feel it is not necessary to further examine them here. For those who are interested, I refer you to "Report of the Committee of Enquiry into the Effects of Pesticides" - (Feb. 1966 Govt. Printer, Melbourne - Price $1).

Assuming that all mechanical means of pest control have failed and the situation is out of hand - here is a "safe" arsenal.

Pyrethrin - Spray - made from the Pyrethrin Daisy which is grown in South Africa and New Guinea. Main target is cabbage moth, aphis and thrip.

Bordeaux Powder - a dust made up from Copper Hxdroxide (or Sulphate) and lime. Can be mixed

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So You Have Bugs ! cont.

with water to spray. Good for fungus attack, mildew and leaf curl.

Derris (Rotenone) - a dust. An extract from the pea family, *Derris elliptica*, which is grown in India. Probably the best general spray and good for thrip, aphis and caterpillers. Caution - poisonous to fish.

White Oil (Albarol) - a spray. This petroleum biproduct comes as either a clear or white oil. When mixed with water for use it makes up into a milky mixture. This is excellent for all scale and sucking insects. Makes plants look good too !

Naphthalene - usually in a ball. This extract of tar is the famous moth ball, and it is alledged to keep ants away.

Mesurol (Baysol) - pellet. Contains 2% methiocarb which breaks down to simple phosphates in about 3 weeks. A highly economical and effective control for snails, slugs and slaters - puts metaldehyde in the era of button-up boots.

Sulphur and Lime - dust. Natural chemical elements most effective against San José scale (*Quadraspidiotus perniciosus*). Also works well on mildew. Note - Lime sulphur is incompatable with most insecticides but mixes and works well with Nicotine sulphate.

Nicotine Sulphate - spray. This is steam distilled from tobacco leaves so there is no fear of tobacco virus. It can be made by boiling "bumpers" but this mixture will not be sterile. A dangerous spray but most effective, especially when mixed with white oil. Good for killing weevils and red spider. Spray pot surface in the morning - as the pot warms the fumes rise and asphixiate the mites under the leaves. This spray breaks down in about 3 days.

Borax (Sodium borate) + Icing Sugar. This famous old standby is still the best way to get rid of ants and cockroaches.

Extact of Rhubarb Leaves. For the economy minded! Boil 3lb. of leaves in ¾ gallon of water for ½ an hour. Add 1oz. soap flakes to ¼ gallon of water and add this to the leaf infusion when cool. Good for aphid but not good for your chooks.

Slay-afe. A pressure pack spray by Hortico. Pyrethrin and Pipenonyl - a benzine derivative. A contact killer for aphis, cabbage moth, thrip, and some sucking and chewing garden pests.

Natriphene - Sodium 2 Hydroxy D'Phenyl. This fungicide from the U.S.A. is the only one I know of which is not dangerous to the user.

Carbaryl - dust. Carbamate which, like Zineb, breaks down in approximately 3 days. Good for most sucking insects.

Zineb - dust. Another carbamate - mainly used as a fungicide. Very effective against rust diseases.

Clensel - spray. Made up of Citronella, Ammonia and Potash Soap - all fairly harmless compounds. Users say it is excellent for aphis and shield bugs. Acts as a spreader for other sprays.

So there you have it. All the poisons are just that poisonous. Treat them with care. Nicotine sulphate is particularly deadly but it has a property in common with all these compounds - they break down in a few days. Get rid of your DDT, Lindane, Chlordane, Rogor 40 etc. and both you and your plants will live a little longer. Nature has provided us with all the tools we need, if they don't work for you then re-examine your approach to the problem. No point in emptying the bath if you don't turn the tap off!

J. Walker, 27 Stafford Road, Artarmon, N.S.W. 2064.

DENDROBIUM KINGIANUM Bidw. (Orchid or Vegetable).

R.S. Smythe

At the request of our Editor, I would like to offer this short article in the way of a discussion. By that I mean I will state a few observations and leave you with a few why's, hoping to see in later articles some opinions. I would prefer this time to choose this subject, but on later occasions I will offer articles of my own area and environment.

While working at the Nuclear Reactor in Sydney some 3 years ago, friends such as Harold Jay and Eric Gordon took me to see the collections of Wal Upton and Murray Corrigan, to name a few. I saw *Dendrobium kingianum* laid on aplenty. The exceptional dark flowering plant of Murray Corrigan's I believe is now famous as it has won numerous awards. Large benches of *D. kingianum* were laid out before me to delight my visual senses. Nostalgically I was transported to various places and saw where plants A,B & C had originally been found. Delighted I noticed that this plant was still aplenty in nature except for the noticeably bare area 2 feet up from the bases of the cliffs.

I came back to Townsville with many of these plants and potted them in many ways. Orchid or

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Dendrobium kingianum Bidw. (Orchid or Vegetable). cont.

vegetable is now the question. These plants grew, multiplied, divided, but would not flower. Mr. S. Raddatz of Brisbane, sent me a piece of the 'alba' form which flowers in profusion each year. Why does only the 'alba' flower up in the tropics ? Why does it flower sequentially and not in mass as it does in the south, or do you have similar problems down there ? Last year Dave Connor from Melbourne visited my family. To impress him I took along my beautiful plant of D. kingianum, rich with fresh 8 - 10 inch long, beautifully grown canes. I impressed my host so much that he said "cut all those B..... canes off, how do you expect that to flower like that". Being the perfect host and swallowing my pride, much against my nature, I cut all those canes off. This year I have not much of a vegetable to look at. Just a few canes, not the malignant growth of a multitude of succulent growths. Perched on the top of each of these few growths is a flower spike differentaited into buds. Question number 3 is why ? once more. Could the answer be that we have had a colder snap. I do not think this is the reason as each year spikes start to develop but they do not grow enough to differentaite into flowers. Therefore it is not a case of bud premordium production as is so well documented with Cymbidiums. I feel it is something to do with the large amount of back bulb material which has to be fed by a few lead growths requiring the diluting down of some of the hormone constituent synthesised in the forward bulbs which at high levels could prevent flower production. This could parallel quite nicely with a dormancy in the plants, if it does occur in the south where only limited hormone is produced during the winter months. Up here in the north, the plants can be on the move all the year round and so would never find their hormone level at a low enough concentration to produce flowering. Maybe if it is so, some day there might be a pill for Dendrobium kingianum not to prevent him from doing what he normally would do, but to make him do what he's not willing to do on his own. I don't know why I used the masculine gender there but I think it was to avoid anyone thinking I had changed subjects.

Now, maybe I have the answer to my 'alba' question. This plant grows very quickly after flowering, producing short, squat and very thick pseudobulbs, even before the other D. kingianum have shown any great developement in their new leads. The growth stops quite abruptly and the plant remains quite dormant until the next flowering. I think the answer offered, fits.

I should ask anyone at all sufficiently interested in this to make some observations in their own bush house. My hands are tied up here, except for my 'alba' and you would not wish me to miss my one assured flowering each year, just for the cause of science. Since I am a scientist by profession I make my sacrifices in working hours. If my letter is in time could you observe your plants. Maybe take a stubborn clone and divide it into two and remove all leaves from one half and pamper the leaves on the other half. Do this immediately after flowering time and report to me what happens next flowering season. A second experiment would be to water a split clone of a good flowering form grown under identical conditions with the first half clone the usual media of water or dilute fertiliser would be used and the other watered with the same media, with the addition of a commercial growth hormone, diluted one part to a million, or using the manufacturer's specification. If you attempt one of these experiments please report failure just as readily as success as biased results could otherwise be drawn. I would be interested to hear from anyone but don't feel obliged as it is just my hobby and not my profession after all ! Happy potting, or should that be pottering ! I thought you potted kids and pottered with plants. What do the mothers say ?

R. Smythe, James Cook University of North Queensland.

A.N.O.S. CAR WINDOW STICKERS.

A quantity of very attractive A.N.O.S. car stickers have been produced for distribution to members, free of charge. They were designed by Phil & Margaret Spence following lengthly discussions by Council. Should you require further copies, write to our Hon. Sec. and enclose 45¢ for each copy. They will be distributed to you in the very near future. To affix: 1. Place in water for about 30 secs. 2. Take out of water and wait till paper uncurls. 3. Slide transfer onto transparent surface face down. 4. Place a piece of blotting paper over transfer and squeeze out water and bubbles with pencil or rubber roller. 5. Leave to dry.

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THE ORCHADIAN - BOUND COPIES.

The Society regretfully announces that the cost of bound copies of all volumes of The Orchadian have increased to $10 per volume. Binding costs have risen very considerably in the last few months and your Council made extensive enquiries before accepting the new prices. Our binding had always been done by an individual bookbinder working within a large printing company, however, following the takeover of that printery and its subsequent closure, we were forced to find alternative binders. After lengthy investigations we arranged to have The Civilian Maimed and Limbless Association do all future binding, though, at an increased price as previously mentioned.

A.N.O.S. CAR WINDOW STICKERS.

Have you fixed yours to your car's rear window ? Don't forget that if you require additional stickers they can be obtained from your Society for 45¢ each.
Members report very favourable response from the stickers and it's interesting to watch other motorists trying to draw alongside in multi-lane traffic to get a closer look at the sticker.

MEMBERSHIP RENEWAL.

Members are reminded that our financial year begins on the 1st. July of each year and therefore your subscription is possibly overdue! Check your cheque butts and if you are not financial, get a cheque for $2.50 off to our Treasurer care of the Society's post box. Remember, do NOT send money. Following our note on the subject in the last issue of The Orchadian I can report that Departmental action has reduced or eliminated the possibility of further Society mail going astray!

Mrs. 'Kit' Murdoch Ill.

Members will join with us in wishing good health to 'Kit', wife of our past President and first Life Member, Bill Murdoch. We understand that she has not been enjoying the best of health for some little time. Bill & Kit are known to a very wide circle of orchid enthusiasts throughout Australia and they recently celebrated their Golden Wedding Anniversary.

COLLECTING ORCHIDS IN T.P.N.G.

Philip J. Spence

I arrived in Port Moresby, in midday sunshine, amongst all the confusion of clearing customs and the many natives cluttering up the airport who were observing the landing of the international flights. I was met by one of the "Three Musketeers" who are devoted species collectors and are recording all the orchid species in the Port Moresby area accessible to the public and from a few privately owned properties. The "Three Musketeers" are Allan Martin, who does the pressing, Peter Luxford, who does the photographic work and assists with the pressing, and Jim Talbert, who also helps with the pressing and recording. Between the three they average nearly a day every week, in the bush collecting and a couple of nights a week recording, so you see how this unique group received their name. Mrs. Talbert drove me to the home of Allan Martin where I was to spend an enjoyable couple of weeks, working during the day, which I will not talk about as it is an evil necessity, and collecting during the weekends. The first weekend we went to the Subitan Sawmill logging site which is approximately 25 miles east-north-east of Port Moresby, in the Owen Stanley Range.

To get to the sawmill you have to drive along a mountainous road which winds through rubber plantations, chicken farms, and past the Rona hydroelectric power station. The group consisted of Allan, Jim, Allan's son Michael, a native named Celestine and I. After fording a river at the sawmill we parked the car in the shade of a giant raintrée and set off on foot along a snigging track, these tracks are about 6' wide and 2' deep, in deep, rich black mud, which makes walking extremely difficult. The first orchid we found was Coelogyne pastulossa, the pseudobulbs of this plant are about 6" high and quite fat, whilst the leaves are about 30" long. The plant was growing on a rotten tree stump right beside the track, at this point we were approximately 2,500' above sea level. Not far away was a large clump of Dipodium pandanum, climbing from about 2' from the ground to 8', up a tree. From here the track started drying out a little, making walking a little easier. During progress up the track we were gathering large numbers of different bulbophyllums, diplocaulobiums, mediocalcars and dendrobiums. Some of the Bulbophyllum species were quite interesting as we never found any two the same, one of them was B. grandiflora and another only had a local common name, 'Hairy Mary. B. grandiflora is the largest flowering Bulbophyllum in the world and 'Hairy Mary' is very similar to the Australian Bulbophyllum baileyi, except that the plant is covered in large hairs (the rotted bown sheaths which protect the new pseudobulbs) and the flowers are larger in size, buttercup yellow and have a sweet perfume.

The further we went, the better the orchid collecting became whilst the jungle got thicker and thicker. Where the bush was dark we would find Sarcochilus such as S. moorii, Ascoglossum papuanum, Taeniophyllum and Renanthera spp., and where the trees would clear we found coelogynes, dendrobiums, phrearias, pholidotas, bulbophyllums and numerous other genera.

In one of the last clearings we came upon, we found a very interesting little Dendrobium which we quickly called the 'flying bird'. The flowers were white at the edges of the sepals and petals, slowly changing to a deep blue nearing the apex. The labellum was gold. The most interesting feature is that the sepals and petals were fully reflexed like a bird making a dive. It belongs to the Oxyglossum section of the Dendrobium genus and is named Dendrobium cyanocentrum.

With our haversacks full of goodies we returned to the car and then to Port Moresby where the "Three Musketeers" spent the next week recording and mounting those not in flower.

The following weekend I was to meet a close friend of mine from Sydney, Jack Jannese, who was to accompany me on the rest of my stay as I was now on holidays for three weeks. After picking up Jack at the airport and giving him a rather rushed lunch, we drove out to Wariarata which is along the same road as our first excursion but not quite as far as the accompanying map indicates. Wariarata is the mountain range to the east of Port Moresby and across the valley is Humbrum's Bluff, forming two extremely steep walls which make good orchid collecting country. The purpose of the trip was to collect Bulbophyllum macrobulbum and to introduce Jack Jannese to orchid collecting in T.P.N.G.

After driving for an hour or so along a very narrow road which has large boulders perched along its edge of the steep side of Wariarata, waiting to drop on you at any moment it seems. Our attention was quickly diverted from the rocks to their surface, which was covered with ferns and orchids, mostly Coelogyne and Pholidota species.

Without realising it, we had arrived at a clearing where we parked the car and made our way on foot along a narrow track. There was not much growing here as it was extremely dry, but we managed to see the odd plant of Dendrobium smilliae growing in the ends of rotted branches on trees, in full sunlight. Dendrobium bifalce was also growing on some of the trees, although lower down on the trunks where they received more moisture.

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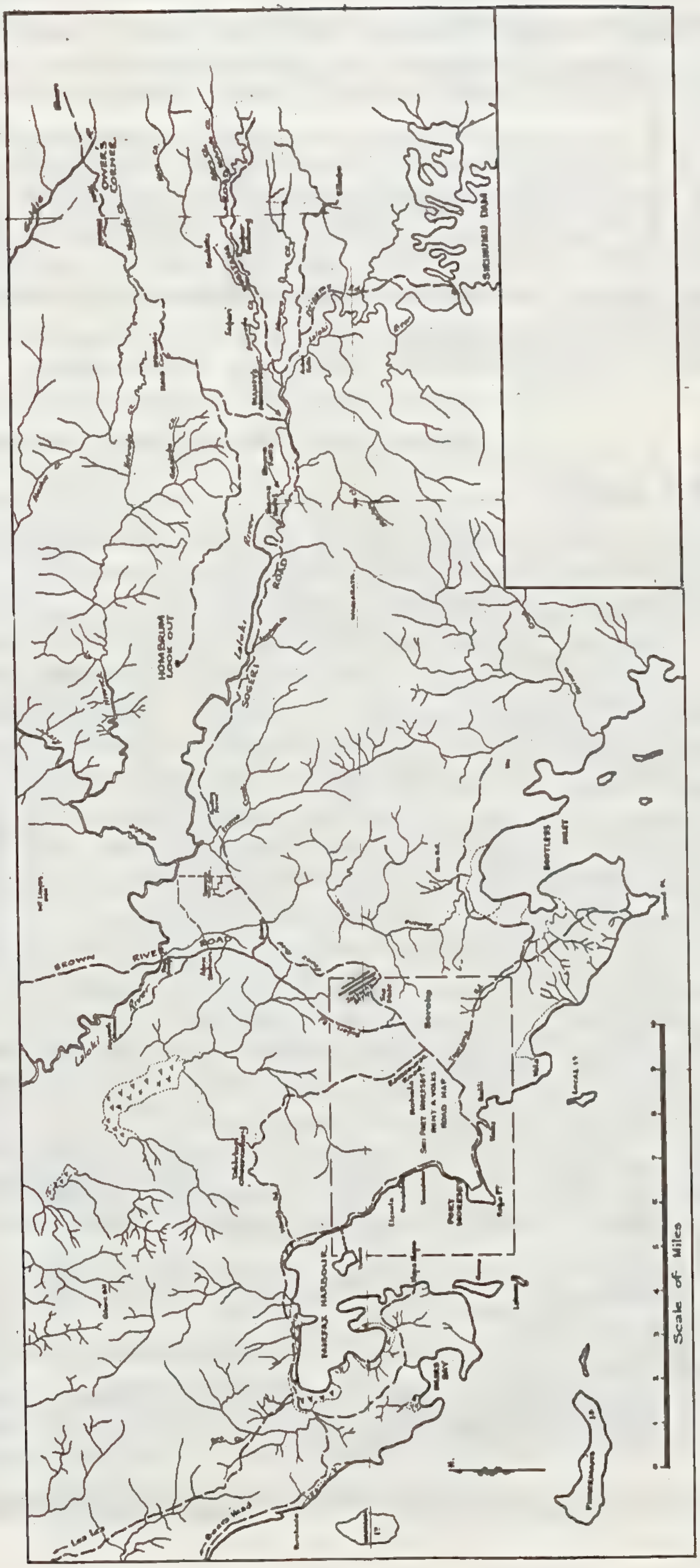
Collecting Orchids In T.P.N.G. cont.



Another interesting thing we saw was an *Oberonia* sp. growing on giant Bamboo trunks overhanging the creek beds. On the mud flats which were only covered with water in flood times were growing *Spathoglottis* sp. in colours from a light pink to a dark purple.
We moved up a hill to a large clump of boulders which had to be climbed, on the top of which were growing *Vandopsis warocqueana* plants by the hundreds, and all in flower. A delightful flower, sepals and petals are well shaped and yellow-brown, labellum and the back of sepals and petals are dark maroon.
At this point of the climb it was only a matter of looking to see who could find *Bulbophyllum macrobulbum* and there it was, growing in all its splendour, its huge strap-like leaves hanging down. Each leaf up to 6 feet in length, pseudobulbs up to 6" in diameter ! The smell of the perfume from its flowers makes collecting in the flowering season nearly impossible, once smelt you want to leave the plant and go in the opposite direction to be sick, we were lucky, none of the plants were in flower! This species perfume is designed to attract the flys who pollinate the flowers. The seed pods which develop are extremely large, almost to the size of a medium sized orange.
Growing on the same cliff was *Dendrobium ophioglossum* with its green-red leaves, white flowers and green labellum forming a striking effect for an introduction to collecting the largest *Bulbophyllum* in the world!

P. Spence, 11 Millham Crescent, Forestville, N.S.W. 2087.

OBITUARY - MR. WILLIAM E. GILES.

Keith Ingram

Those naturalists who have browsed through the Central West of New South Wales will learn with considerable regret of the death of Bill Giles on 10th. June, 1972, aged 71 years. Others, readers of nature periodicals, will have seen references to him in print on a wide variety of topics. Although an orchardist in private life, and plagued in later years by poor eyesight and other physical infirmities, Bill found time to follow his hobby with unceasing zest. We have all benefited greatly by his keen observations and wise deductions. It is hoped to publish soon some extracts from his personal communications.
A few years ago the Bathurst Naturalist Society, of which he was a foundation member, published a list of approximately 50 native plant specimens growing in the Giles' arboretum at Springside, Orange. These included 50 eucalypts, mostly cold country species, for it was Bill's idea to experiment with these for the benefit of farmers and gardeners in the high country. Bill also published a list of the flora of the Mt. Canobolas/Orange areas in "Australian Wildlife" (pp.63 - 71, 1961). Although, in conjunction with his brother Fred, and sister, Madge, he explored practically every nook and cranny of the Central West in the search for new and interesting plants and records, perhaps his activities in the Mt. Canobolas to Mullion Creek area are best known and most valuable.
Bill's work with terrestrial orchids has been extensively documented in the "Orchadian" (December, 1970, Vol. 3, No. 11, pp.130 - 152) under the title "Orchid Flora of the Central West", where 129 recordings are listed for the brothers, distributed over the 124 species recorded for the area. Many more, of course, were noted year by year, without being publicised. However, in letters, Bill did, from time to time, draw recipients'attention to what the brothers had seen - for example, the isolated appearance of *Corybas* sp. aff. *fimbriatus* at Springside at Easter 1959, and their discovery at Mt. Conobolas of *Spiculaea huntiana* and of *Pterostylis alata* at Four Mile Creek, Cadia:

> Rupp (Orchids of N.S.W., 1943, p.92) had written of *P. alata*: "No N.S.W. specimens are available at present. The species is included here as it is generally agreed that *P. striata* FitzG., from Yass, is *P. alata* (Labill.) Reichb. f., and Moore & Betche's 'Handbook' records it under the pseudonym *P. praecox* Lindl. from 'South Coast and Tablelands'".

Thus, Bill and Fred's diligence filled in another gap. Only keen orchid lovers who have tramped over the stony ridge where *alata* occurs can recapture the thrill that must have come to the brothers with their discovery.
Bill was also an early member and active supporter of the Burrendong Arboretum Society, making yearly donations of plants.
He discovered a beautiful *Prostanthera* at Devil's Hole, Mt. Canobolas, having an affinity to *P. phylicifolia* (Mr. G. Althofer has suggested this should be named in the discoverer's honour). Three other "finds", selected at random, illustrate the catholicity of Bill's interests -

Pimelea treyvaudii from Lower Lewis Ponds (1959), and *Dodonaea stenophylla* and several

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Obituary - Mr. William E. Giles. cont.

caladenias (C. patersonii and its var. concolor, C. reticulata, C. dilatata var. concinna) from near Eugowra.

Overall, their work is chiefly notable for the extension of records of alpine terrestrials from the Jenolan - Mt. Werong area to Mt. Canobolas and for ferreting out interesting species throughout the slopes.

The brothers' significant contribution came at a time of awakening interest in Central West orchidology begun last century by Collie, Clunies Ross, A.G. Hamilton and Blakely, and revived by Rupp and the Althofer brothers. Without the tremendous effort of the Giles brothers in searching the countryside year after year, and the careful tending of the pots by their devoted sister, our knowledge of the orchids of the region would be far less complete than it is.

The memory of Bill Giles, that sincere, modest, dedicated fierce conservationist and acute observer of nature and life will be revered by us throughout the years.

C.K. Ingram, Mt. Tomah, Via Bilpin. N.S.W.

OBSERVATIONS ON EPIPHYTES IN N.S.W. cont from Vol. 4. No. 4.

Papillilabium beckleri: This orchid was the find of the trip. What a little gem ! To see a plant hanging from a twig with its tuft of leaves and racemes of delightful flowers is an intriguing sight. Look closely into those flowers and you see beauty unsurpassed. We found it to be common in quite a few places and always in full bloom. Its dainty little flowers hanging in a spiral raceme - often two, or in one case, three racemes from a cluster of only three or four leaves. It was often dangling by one or two roots in the manner of the "Tangle Orchid". Indeed for their size the plants have a prodigous root system. In the Royal National Park the species was growing on the tiny twigs in the centres of "Water Gums", often in very open situations. It was here that we found an albino - a plant with no pigment in the leaves other than green chlorophyll and glistening white flowers with a delicate apple green column and callus plate. A beauty indeed. On a second trip to another area of the National Park the tiny orchid was found to be very common in a sheltered gully on "Water Gums" and wattles and extending quite a distance from the creek on Myrtles. At Bulahdelah State Forest we found it once again on "Water Gums" and Myrtles and also occasionally on a new host - Callicoma serratifolia.

Plectorrhiza tridentata: The "Tangle Orchid" is an extremely common orchid of many vegetation types along the east coast. In Victoria we are used to seeing it in high rainfall jungle areas usually in dense shade. In N.S.W. I was surprised to find it often growing in fairly open dry areas - of course it was in the shaded rainforest as well. Our first encounter with it was in the Royal National Park where they were growing high on many trees over the river - a very shady situation. Just south of Taree the species was abundant on the twigs of melaleucas, and occasionally also on casuarinas, near a very dry watercourse. Here the area was very open with a lot of the casuarinas growing right to the creek. In this area some very large "Tangles" were seen, however the majority were small seedlings. At Bulahdelah State Forest there were some huge specimens dangling precariously from gigantic eugenias and comically supported by the usual one or two roots. Here specimens were also found on "Water Gums", Callicoma serratifolia and myrtles. In all these places the plants were in full bloom with their delightful spicy perfume very noticeable. A chance stop on the way home at Coolwater Creek on Mt. Drummer, Victoria, revealed "Tangles" in bud and quite common on Musk (Olearia argophylla), Hazel (Pomaderris aspera) and Prickly Currant (Coprosma quadrifida).

Sarcochilus falcatus: Unfortunately we saw very little of the delightful "Orange Blossom Orchid" on this trip. Three plants only were seen very high on a Casuarina glauca in a swamp at Forster. These were very conspicuous with the yellowish leaves standing out at right angles from the trunk. They were in bud. In the Royal National Park we noted odd specimens on trees hanging over the river and usually in shady situations.

Sarcochilus olivaceus: This was another species we would have liked to have seen more of. Whenever we found it, it was growing in very dense shade and always near water. At Bulahdelah State Forest we saw a very large specimen in bud on a Myrtle and a few smaller plants on a "Water Gum". At the Royal National Park it was growing in rainforest along the creek on "Water Gums" and in one place we came on a very vigorous patch on the bark of a huge vine. All of these plants were also in bud.

Sarcochilus australis: Although we did not find this species in N.S.W. I have included some relavent comments. We hunted high and low for it in situations very similar to where it

Observations On Epiphytes In N.S.W. cont.

grows in Victoria, but we did not find a sign. In the same siuations in Victoria it would be present in abundance. Brain Whitehead tells me it is very uncommon in N.S.W. - why this should be when there is such ideal country is interesting speculation. Just to reassure myself, I hunted for it when we arrived back in Victoria. Sure enough it was common at Coolwater Creek on Musk, Hazel and Prickly Currant. At Nowa Nowa it was abundant on "Water Gums", Hazel, Large Mock-olive (Notolea longifolia), Dogwood (Cassinia longifolia) and occasionally Long-leaf Wax-flower (Eriostemon myoporoides).

Sarcochilus hillii: This little gem was found by the kindness of Brian Whitehead. Under his capable directions we located it in comparative abundance just south of Nowra. Here it was growing exclusively on Myrtles in a fairly dry but protected situation above a creek. The plants were scattered over the moss covered trunks mostly at head height, but with some in the branches and a few on the butts, almost at soil level. Its slender, mottles leaves and dainty flowers make this species a real gem.

Cymbidium suave: Characteristically we have listed the first epiphyte we saw on the trip last in the article. Just north of Bega, on the way north, we spotted the familiar tuft of leaves perched high on a stunted branch of a Eucalyptus. From then on, they became a familiar sight wherever we went, however, none were seen in flower. The biggest specimen found was at Taree, on the bole of a giant Eucalyptus. The clump was about 4 feet through, with masses of leaves and pseudobulbs (stems?) spreading in all directions. It must have been a grand sight when in flower. Other plants were seen in dead stumps and on logs, on the ground, half way up the trunk of a paperbark, and on odd old Casuarina trees. At Bulahdelah State Forest we came across masses of seedlings sprouting up on rotting logs - a legacy of the disasterous bushfires.

D.L. Jones, 2 Kathleen Close, Bayswater, Vic.3153

DENDROBIUM WILLIAMSIANUM Reichb.

N. Howcroft

Dendrobium williamsianum Reichb. belongs to the subgenus of Eu-dendrobium and section Phalaenanthe; it occurs in the deciduous forests of the coastal plains of Papua.

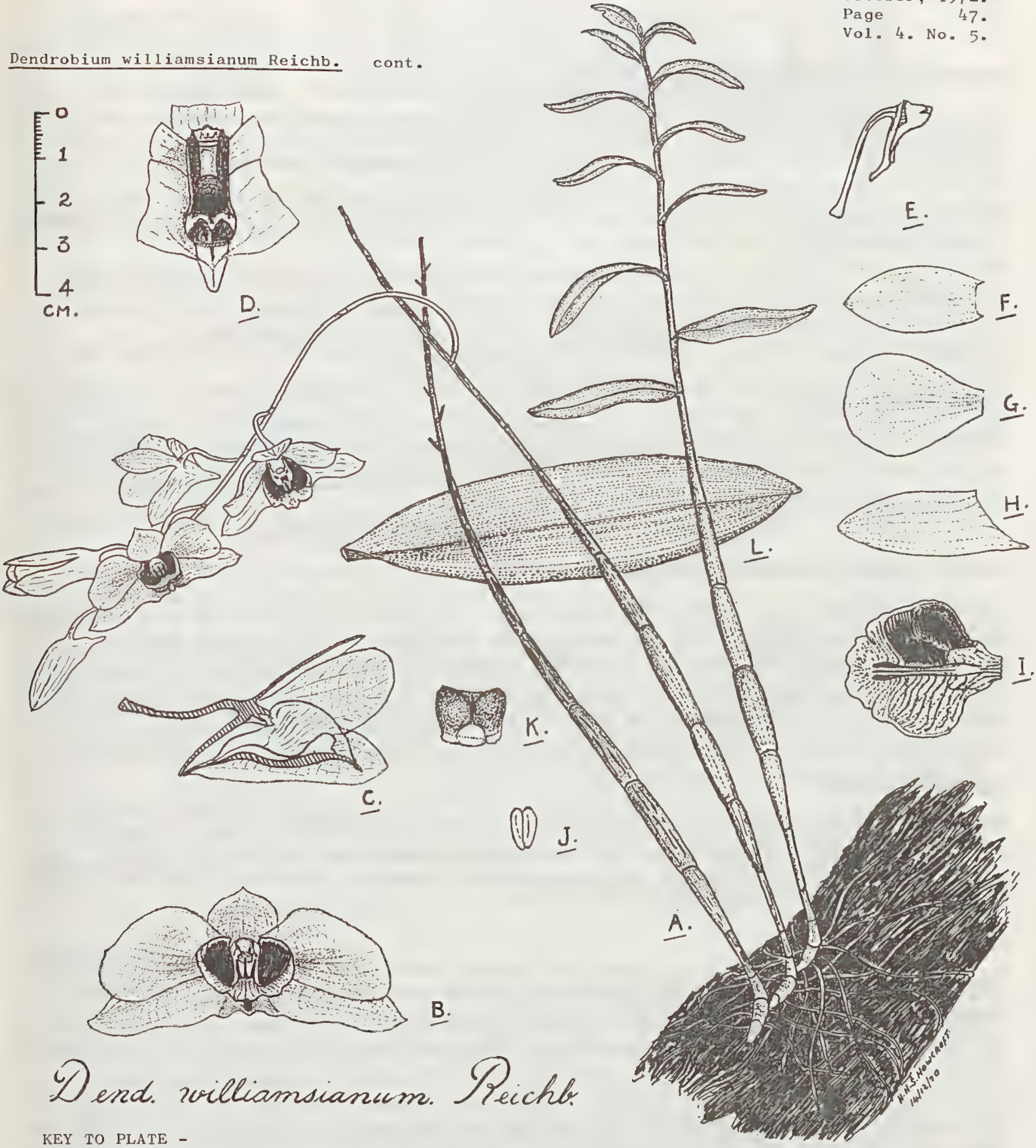
Description: An erect slender epiphyte, clonal clumps small. Stems up to 200 cm. tall, with the diameter of the thickest part of the stems at 0.4 - 0.6 cm., slender at the base, the stems thicken for approximately 1/3 their total length and taper off so that the remaining length is very slender. Old stems are dark brown, otherwise greyish-white with old sheaths tightly enveloping the basal 1/3 of the stem, young growth is green with reddish-purple striations. Leaves 5 - 10 approx., confined to top half of stem, narrowly ovate, unequally bilobed, more or less acuminate, up to 10.9 x 2.6 cm., light green, sometimes with purple margins. Roots thin and flexible. Racemes several, up to 28 cm. or slightly more in length, suberect to drooping, bearing up to 15 flowers. Peduncle usually longer than rhachis. Flowers 5 - 6 cm. diameter, dorsal sepal and petals together form a spreading awning over the labellum. Pedicels 2.5 - 3.0 cm. long. Dorsal sepal narrow ovate to ovate 3.0 x 1.5 cm., lateral sepals ligulate or oblong-obtuse acute 4.0 x 1.5 cm., petals wedge shaped obovate obtusely acute 3.0 x 2.5 cm., labellum from chin narrowly hastate, trapesium like, 3.5 x 3.0 cm. spread out, 3 keels of square plates joined at the base, located in the mid distal half of labellum and erect and conspicuously apart approx. 0.6 x 0.6 cm., short disc at base of labellum, column 6.0 - 7.0 cm. long with apical teeth one on either side, column foot fairly straight 1.8 - 2.0 cm. long, mentum small and conical, stigma oblong, anther more or less square from the front.

The flowers colour is a pale pink to almost white, shiny with some slightly deeper coloured veins in both sepals and petals; labellum is pale pink outside and on the border of the lip with deep purple veins, ridges and throat with some fine hairs fringing the anterior of the purple near the edge of the labellum.

Flowering season: This commences around May and appears to continue through to December. Flowering plants have been observed by the author on the Papuan side during the months of May, July, and September over the past 6 years. In Lae and Bulolo, specimen plants have been observed in bloom in January and other months through to December.

Habitat: This orchid is found in deciduous forests in an area subject to long dry spells and monsoonal rainfall which brings heavy rains to the coastal regions between December and May. The orchids appear to like the upper-most branches in the crowns of the trees where they

Dendrobium williamsianum Reichb. cont.



Dend. williamsianum. Reichb.

KEY TO PLATE -

A. Reduced ½. Small plant.
B. Flower to scale nat. size.
C. Cross section, lateral view to scale nat.
D. Ventral view of column to scale X2½(size.
E Column stripped of petals & labellum to to scale nat. size.
F. Dorsa sepal to scale nat. size
G. Petal to scale nat. size.
H. Lateral sepal to scale nat. size.
I. Labellum to scale nat. size.
J. Pollinia to scale enlarged ± X4.
K. Anther to scale enlarged X4.
L. Large leaf to scale nat. size.

Dendrobium williamsianum Reichb. cont.

would receive drying winds and direct, strong sunlight.

Dendrobium williamsianum seems to grow mainly on trees with coarse to fine fissured barks and it is likely that it prefers some species of trees to others in the wild state; several specimens have been seen to grow on old branch stumps of Eucalyptus papuana near the edge of the deciduous coastal scrubs where they are more common.

Cultivation: Like may of its relatives Dendrobium williamsianum does not like wet feet, it is sensitive to pot culture but can be successfully grown in small pots; it does show preference to establishment onto trees and posts, this is demonstrated here in Papua, New Guinea, in many local collections.

In the author's collection, several plants are growing reasonably well on Frangipanni while one Papuan collector once residing at Bulolo, successfully established a healthy plant onto the lower section of Eucalyptus torrelliana; another collector in Lae has a small healthy plant established on a potted Bougainvillea and several others on Crescentia.

The Botanic Gardens in Lae and in the newly formed gardens of the University of Papua, New Guinea, have several fine specimens established on teak posts.

Dendrobium williamsianum has been used to make a number of fine hybrids, many of which have inherited the habits of Dendrobium williamsianum and are difficult to grow, or have produced disappointing flowers , but, with careful selection of the better hybrids in the first filial generation, the beauty of Dendrobium williamsianum flowers should enhance those of the following generations of out crossings with other Dendrobium spp.

In itself, this orchid is well worth a special place in collections and should receive some future protection from over exploitation in the wilds.

N.H.S. Howcroft, Care of Forestry Dept., P.O. Box 134, Bulolo. T.P.N.G.

"GROUND ORCHIDS OF AUSTRALIA" - Maynard R. Pocock.

Jacaranda Press are to be congratulated for their foresight in publishing this excellent work by Maynard R. Pocock despite the recent "rash" of similar works. The book is of some 100 pages with 150 colour plates and comprehensive descriptions of terrestrial species. The contents include: Abbreviations to Author's Names, The Orchid Calendar, Glossary, Bibliography and Index to Colloquial Names. The latter can be a real trap for the unwary as colloquial names for individual orchids can vary within one state and there are many orchids with up to 5 such names. The book has a soft cover and measures 8½" X 5½" which makes it an ideal size for field reference. Available from all good book shops at a recommended price of $4.50. We will include a complete review in the next issue of The Orchadian.

MEMBERSHIP RENEWAL.

Membership renewals are now due! To facilitate the expeditious handling of monies, the Council has decided that in future the Hon. treasurer will not issue receipts to members. A majority of monies received are in the form of cheques which are returned to members banks and in fact, form a reciept. If you specifically require a receipt please make a request for same at the time of forwarding your renewal.

1972-1973 COUNCIL.

Following the recent election of Council, we received with regret, the resignation from the position of Hon. Secretary, of Jim Walker. New business and family responsibilities make it impossible for him to continue in that capacity and to do the job in the manner he saw necessary. However he has acceded to Council's request to remain on Council, and will fill the position of Asst. Editor with distinction. Eric Marygold who has filled the position of Hon. Treasurer for many years, has volunteered to take over the heavy responsibilities of the position of Hon. Secretary. Council therfore co-opted Mr. D. Tomich to fill the position of Hon. Treasurer. Dan has been a member of Warringah Group for some time and is an Accountant by profession. We all wish him good fortune in his responsible position on Council. It is often overlooked, just how much work is undertaken in an Honorary capacity by members of Society's and organisations of this nature.

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NEW BOOKS.

"Ground Orchids of Australia" - As promised in the last issue of The Orchadian we have included a very comprehensive review of this handy work on page 50 of this issue.
"Flora of The Sydney Region" - By N.C.W. Beadle D.Sc.(Syd), O.D. Evans B.Sc.(Syd) and R.C. Carolin Ph.D.(Syd) with Pteriodophyta and Bipinnate Acacias by Mary D. Tindale ~~D.~~Sc.(Syd). This scholarly work replaces the earlier "Handbook of the Vascular Plants of the Sydney District and Blue Mountains" by the same authors in 1962. Whilst we hope to include a comprehensive review in the February issue, we can give you a little information as follows; 725 pages on the flora of the region, with 28 pages on the Orchidaceae. Published by A.H. & A.W. Reed, ISBN 0 589 07086 X. Suggested retail price $13.95.
"Australian Rock and Tree Orchids" by Densey Clyne. This work follows Densey's earlier work "Australian Ground Orchids" which was so popular. The new work is also published by Periwinkle Books, contains 112pp. has 69 colour plates and retails for $1.50. Although I have not yet had an opportunity to study the book I am sure it will follow Densey's earlier works with their fresh, easy to follow style for which the author is reknowned. I hope to have a review in the February issue.

MEMBERSHIP RENEWAL !

If you hear of anyone who does not receive this issue, it could be because their subscription for 1972 - 3 is still overdue. Give our new Treasurer a headache and fire off your cheque for the next couple of years now ! Unless subs. are paid promptly, P.M.G. regulations forbid posting to non-financial members. Remember subs. are due on the 1st. July each year.

MATERIAL FOR THE ORCHADIAN.

The Editor is constantly searching for new material for your magazine. Can you help ? Of course you can. Put pen to paper, or thumb in tar, and tell us of your successes &/or failures. Others would like to hear of your last orchid spotting trip. Remember your Editor can bash any article into shape, if necessary, it's the lack of material that gets us upset and difficult to get on with ! Should you not feel up to writing yourself don't hesitate to tell us of an article or author you think should appear in The Orchadian.

GROUND ORCHIDS OF AUSTRALIA by Maynard R. Pocock.

Reviewed by S.C. Clemesha

This work is one of the most recent of the considerable number of orchid books on the Australian Orchidaceae, It is essentially a beginners book and is not comprehensive enough for the more advanced enthusiast. Although a few rare South Australian endemic species are covered in a more comprehensive manner than in previous publications.

The species are treated in alphabetical order which is a great advantage for a book of this type. Common names are used rather carefully and wisely, with no new ones having been created for some rare species, as has been the case in the past with some ridiculous results.

The book has some inconsistencies which could easily have been avoided and thus improved the final work.

Some genera have a general description preceding the descriptions of individual species, whilst others, for no apparent reason do not. There is no consistent pattern with these anomolies. Many of the generic descriptions are strikingly similar to those of H.M.R. Rupp's "The Orchids of N.S.W." though the language is simpler.

The author states that "As much as possible the words of derivation have been given at the commencement of each genus and the derivation of the species has been shown under the species name." Here again many have been missed, including a large number which could easily have been incorporated e.g. *Adenochilus*, *Caladenia gladiolata*, *Caladenia lobata*, *Caladenia lyallii*, *Diuris flavopurpurea* and many others.

Although an amount of updating of names is in evidence, a number of nomenclatural changes have been missed, with resulting errors, such as *Caladenia alpina* and *C. lyallii* being treated as two separate species. In fact, the first is a synonym of the second. *Caladenia toxochila* is included and claimed as a South Australian endemic. This species extends to Victoria and New South Wales and is now known as *Caladenia dilatata* var. *concinna*. *Habenaria* is claimed as having only one species in Australia, *Habenaria ferdinandii*. In fact sixteen (16) are recognised at present.

Diuris colmanae and *Diuris cuneata* are both included. The first is a synonym of *Diuris tricolor* and the second a synonym of *Diuris punctata* var. *longissima*.

Other comparatively minor errors occur at various places in the book e.g. recording *Pterostylis curta* from all states and omitting *Chiloglottis gunnii* from the January flowering list. The *Pterostylis curta* error also appears in Rupp's "The Orchids of N.S.W."

Liparis bracteata, *L. fleckeri* and *L. reflexa* are included. These are rock dwellers (lithophytes) and not true ground orchids. *Monadenia micrantha* is described, but its most interesting fact - that it was accidentally introduced from South Africa is omitted. *Phauis australis* is stated to be the largest terrestrial orchid in Australia. This is not true, as the *Galeola* species greatly exceed it in height. *Pterostylis acuminata* is recorded from New Zealand. It does not occur there ! A difference between *Pterostylis alata* and *Pterostylis robusta* (the latter, at present is regarded as a variety of *Pterostylis scabra*, though probably incorrectly) is stated as the rosette of leaves which appear separately from the flowering stalk, after flowering time. In both these species, the plants which flower produce no rosette that year and rosettes of non-flowering plants are usually plentiful at flowering time.

A number of botanical name changes have been interpreted wrongly under *Pterostylis turfosa* (now recognised as a synonym of *Pterostylis barbata*) the author states "A.S. George of the Western Australian Herbarium considers *P. barbata* and *P. turfosa* to be identical but L.I. Cady of Sydney considers them to be distinct." This is quite incorrect as L.I. Cady, who incidentally is from Kiama, not Sydney, agrees completely with A.S. George that *Pterostylis barbata* and *P. turfosa* are synonymous. In stating they were synonymous, A.S. George wrote that if the eastern Australian (& New Zealand) plant was different, then at present it was un-named. L.I. Cady filled this omission by describing *Pterostylis plumosa*. A.S. George gave no impression of disagreement when recording *Pterostylis plumosa* from Western Australia. I note that *Pterostylis plumosa* is not mentioned by Mr. Pocock. The plant he refers to as *Pterostylis barbata* is obviously *P. plumosa* and its New Zealand occurrence is omitted. Similar confusion occurs in his treatment of the 'rufous' group of *Pterostylis*. The descriptions of these refer to such dated points as the state of the leaf rosette at flowering time and stem bracts in *Pterostylis hamata*. His plate labelled *Pterostylis hamata* is in fact a good example of *Pterostylis boormanii*. His plate labelled *Pterostylis mitchellii* is in fact *Pterostylis biseta*, (*P. mitchellii* is now a subspecies of *P. gibbosa* & found in the northern half of N.S.W. and Queensland.

Under *Pterostylis mitchellii* is the statement "This species differs from the eastern states species, which has been reclassified by Messrs Blackmore and Clemesha as *P. gibbosa* ssp.

Ground orchids of Australia by Maynard R. Pocock. cont.

mitchellii Lindl. They were not able to classify the S.A. species owing to the absence of specimens." This is true of Western Australia, but quite untrue of South Australia as a considerable amount of material from there was studied and the type of *Pterostylis biseta* is in fact a South Australian specimen, from near Adelaide (Blackwood).

The high standard of the photography and alphabetical treatment of the species are the good points of this book, but, the inconsistencies and errors in the text reduce its value. Possibly Mr. Pocock hoped the South Australian Herbarium would check the text, as the forward to the book is by Hj. Eichler of the Adelaide Herbarium. The staff of this Herbarium has, at least till very recently (I do not know about the present) lacked a botanist with broad knowledge of our orchids.

Regretably, most of the orchid books published with a "popular appeal" have as many, or more errors in the text than the book under discussion. I feel it is regretable that when an author lacks the knowledge to prepare text with a minimum of errors they do not have their material checked by someone with such knowledge prior to publication.

TWO RARE TERRESTRIAL ORCHIDS FROM CAPE YORK PENINSULA.

P. Laverack

During the course of a recent field trip to the Iron Range area of Cape York Peninsula, several interesting orchids were encountered. Perhaps the most unusual of these were two terrestrial orchids - *Dendrobium lobbii* and *Bromheadia venusta*.

Dendrobium lobbii was first officially recorded in Australia in 1968 and *Bromheadia venusta*, an endemic species was described in 1953. It is interesting that the late Dr. Len Brass collected specimens of both species in July 1948, but was not able to identify them. Indeed it was reading in his journal of "orchids of epiphytic type.....rooting in the peaty bog..." which prompted me to search for them.

While Brass was the first to collect *Dendrobium lobbii* in Australia, it has only been recorded once in the literature to my knowledge (Walters, Orchadian 24;1968:130-131) near Cardwell. This record (September 1972) is several hundred miles north of Cardwell and it would seem reasonable to assume that this orchid does occur at locations between these extremes. Indeed *Dendrobium lobbii* may quite possibly be more common in North Queensland than was previously thought, as it blends in well with the grasses, sedges and *Restionaceae* which characterise its habitat and is extremely difficult to find. It was growing in a waterlogged peaty swamp and was in full flower in September, when seen.

Bromheadia venusta has only occasionally been recorded in Australia. An acquaintance recently reported that he had seen it growing near Weipa, so it may be widely distributed on Cape York Peninsula where conditions are suitable. The plants seen at Iron Range were in and on the margins of the same swamp in which *Dendrobium lobbii* was found. Those growing in the wetter parts of the swamp were about 40 cm. tall, but those growing in the firmer sandy soil of the margins were almost 2 meters in height. Most of the tall plants seen were in bud (only one open flower was seen) indicating that the flowering season extends into October at least.

The area in which these plants were seen is a large swamp of several acres reminiscent in many ways of the Wallum swamps of more southern latitudes. The pitcher plant (*Nepenthes mirabilis*) was very common, but apart from a few small trees of *Pandanus*, the vegetation was less than one metre tall and consisted of low sedges etc. *Bromheadia venusta* was, in fact, one of the most common plants in the area.

P. Laverack, National Parks Section, Forestry Dept. Brisbane.

CYMBIDIUM CANALICULATUM IN NEW SOUTH WALES.

Russ Maslen

On a recent field trip to an area in the Whian State Forest I discovered *Cymbidium canaliculatum* growing in association with *Cymbidium madidum* on a decomposing sawmill sawdust dump. The *Cymbidium canaliculatum* plants were comparatively small (some 6" high) and no large plants could be located in the immediate area. The sawdust dump is on the south face of a ridge, approximately 10 miles south west of Mullumbimby. The average annual rainfall for the area is 100 inches.

A.W. Dockrill in "Australian Indigenous Orchids" p.630 states "A very widespread species, extending from the Hunter River in central New South Wales to the top of Cape York Peninsula and westward across the continent to north-western Western Australia. It is essentially a plant of the inland but may be encountered almost anywhere except the moistest coastal and highland area."

Russ Maslen, 1 Tyagarah St, Mullumbimby, N.S W. 2482.

NOTES ON THE POLLINATION OF CALOCHILUS CAMPESTRIS R.Br.

Leo Cady

In the Victorian Naturalist Vol.62;199 (1946) Mr. Fred Fordham gave an interesting description of the pollination of the "Beard orchid", Calochilus campestris R.Br., as he and his wife observed it. The method described was by an insect agent, namely the scollid wasp Campsomeris tasmaniensis.

Mr. Fordham is a keen and observant naturalist, whether the method used is typical of this species in its northern stations, or whether the self pollination I describe is the generally excepted, I cannot say. But, in the dozen or so plants studied it seemed extremely difficult to remove the pollinia by outside means. I tried at varying intervals during the life of the flowers with no success, and in this species, or for that matter, most of the genus found in this locality normally contain 100% fertilised ovaries, suggesting self pollination in preference to insect pollination.

My observations on the method used by the plants to self pollinate is as follows.

The column of the species has the anther and stigma placed in the ideal position for self pollination. The anther containing the pollinia is immediately above the fleshy disc-like stigma. The pollinia is situated in two pear shaped cases, in early bud these are completely sealed, but a line running vertically from the basal section to about the centre of the cases is evident. At this period the rostellum is upright between the pollinia cases and is digit shaped, the anther assemble can be moved up or down and the rostellum slides freely in the cavity of the pollinia cases. As the bud matures the rostellum becomes shreded (as if making roots) at the inner part of the digit shaped section, this section, which up to now is dull and colourless, takes on a shiny opaque or whitish look, it also becomes viscid and becomes attached to the pollinia cases from its base to about the centre.

Just before this takes palce, the pollinia cases dehisce, splitting vertically and the pollinia becomes flowery, the grains swelling and crumbling, falling downwards onto the now viscid upper edge of the stigmatic surface.

If the anther cap is removed at this stage, it will be seen that the two pairs of pollinia remain tightly attached to the now very viscid rostellum and the upper edge of the stigma, whilst the pollinia has grown onto the top edge of the stigma, the pollen grains having germinated there and sent the tubes downwards, either on the surface of the very siscid stigma, or down through the now non existant stigmatic hole.

The column in the bud is very upright as the anthers dehisce it gradually bends forwards and as the ovaries swell and the floral segments loose their use the stigma withers, but the pollinia are still firmly attached to the top of the stigmatic surface.

In this species, as with most of the genus, the green sepals appear to assist the plant with the photosynthesis, for they are very persistant and retain their normal colouring almost as long as the ovaries before withering.

Leo Cady, Kiama, N.S.W, 2533.

A 'Glass House' FOR $6 - OR, HOW TO BEG, BORROW, BUT NOT STEAL !

R. Mutton

To build a 'glass house' for $6 you must kick pride out the window and acquire a very thick hide and become a scrounger.

Around Mosman we have Council 'Clean-Ups' every 3 months, so keeping your eyes skinned you can obtain the necessary materials very quickly. But one word of warning. You must always knock on the appropriate door and ask, not steal. You never know, they might be being evicted!

From such a trip I obtained a rusty 'A' frame from a swing, the centre bar between the two 'A's' was knocked out (it only needed a tap as it was so rusty) and the two straight pieces used to suspend the seat were tied across with rope and electrical flex So now place the 2 'A' frames approximately 6' apart. To steady the frame, we tied it with rope to the back fence, but it could be fixed into the ground and staked.

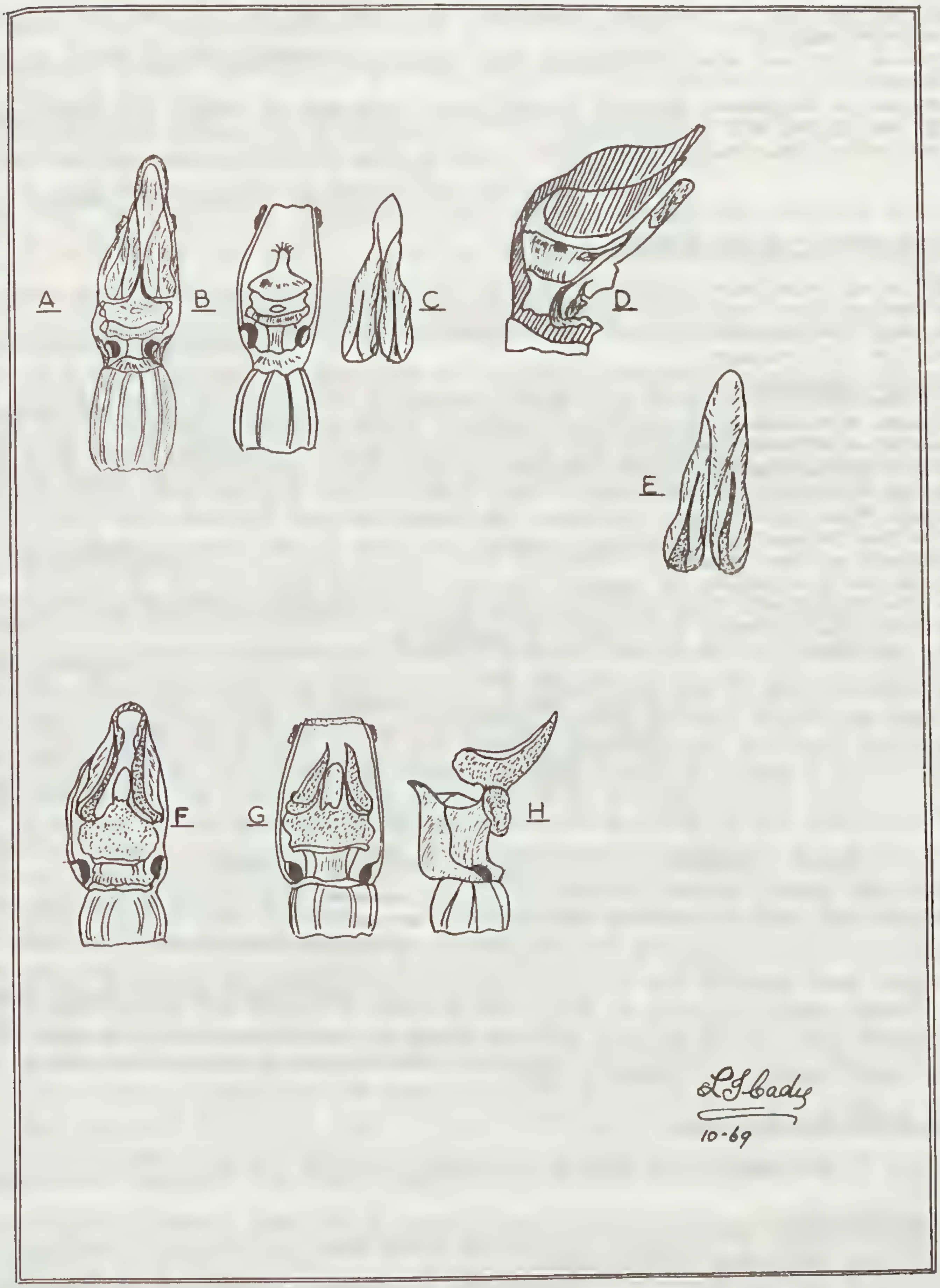
We then went around and found some boards for the bench and 2 more thin boards to act as stabilisers. The stabilisers were again tied on with rope. The bench boards were rested on the cross bars of the 'A', and again tied on.

An alley was left down the middle with benches on either side providing space for 2 pots deep and another board was placed across one end to give 4 pots deep.

Now comes the part where you have to spend the money! After measuring up, off I went to buy the heavy-weight clear plastic, eyelets and hessian. The plastic and hessian were cut to size and eyeletted, then tied onto the frame with fishing line or thin plastic tubing.

continued p. 54.

Notes On The Pollination Of Calochilus Campestris R.Br. cont.



L.J.Cady
10-69

KEY TO PLATE

A Column in bud.
B Column with the pollinia removed showing stigma and disc-like rostellum, the roots or attachments at the apex can be seen.
C Anther showing pollinia cases with marks at the base of the eventual splitting lines
D Stigma and rostellum sectioned
E Pollinia cases showing position of the splits
F Column of flower just closed
G Column with anther cap off showing pollinia resting on the top of the stigmatic surface
H Side view of column showing pollinia on the upper edge of the stigma

A 'Glass House' For $6 - Or, How To Beg, Borrow, But Not Steal ! cont.

Except for one side of the front flap which was tied together with the ties from the 'Gladwrap storage bags'.
The plastic etc. was also tied to the frame and bricks were placed on the bottom to weigh them down.
We were now in business. The only trouble was I went mad and bought and bought and in no time it was filled and on I moved to a 9' x 9' platic house costing $80. This is now filled, only two years after building my first. I don't want to know how much the next one will cost!

Roslyn V. Mutton, 63 Bond St., Mosman, N.S.W, 2088.

VICTORIAN GROUP - Bulletin News.

The following notes were extracted from the Bulletin of the Victorian Group, who, in turn, had extracted them from V.O.C. October Bulletin (complicated eh!):
Re the news item entered by Mrs. Joan Stephens in the October Bulletin: I feel that some explanation is necessary.
Cypripedium calceolus is a very rare native of Great Britain. At one time it was known from several counties in the North of England, growing in deciduous woods on the limestone formations. For anumber of years now, however, it has only been found in a few situations in the mountains of West Yorkshire and the few spots where it grows are known to a small number of naturalists and botanists who rigorpously keep their secret. For a number of years after the Second World War, I was living in that general area, and was privileged to know one of the sites. These plants are, of course, deciduous and when in growth are difficult to pick out from the foliage of Convallaria majalis, the Lily of the Valley, which is quite common in the woodland on the limestone. Sometimes there are no flowers for several years in a colony of plants due to a number of reasons, and when a flower does appear, it is likely to be picked for a specimen, this then precludes the plant setting any seed, and, therefore, deprives it from carrying out natural regeneration.
This is the reason why such great interest and care was taken by the botanists from Leeds University, in order that the plant may form a seed pod and distribute seed, and we hope increase the numbers of the plants. The latest information which I have of one colony is in 1970, when there were about 20 plants still growing in the area, although there was also evidence that some had been recently removed. Let us not be too complacent about our own orchids, as for a number of years, several species of 'groundies' have not been seen, and there are several others known to be on the verge of extinction. So please, before digging up a rare orchid, let us think, would it not be better to leave it ?

Cliff Grosvenor

Cliff is the Chief Propagator at the Botanical Gardens, Melbourne.

This makes one wonder whether attempts are being made to help Nature by raising the seed in laboratories and then re-planting the results. Our own Diuris alba is in a worse position still, and we should be working hard on methods of raising terrestrials from seed and so that the techniques can be applied to this and others in similar straits. A start has been made but problems have appeared and with the close of the terrestrial season we are about to start again. Perhaps early next year we shall have a night to expose the current knowledge of the situation. In the meantime for the fiddlers among us the following is offered by A.N.O.S. (Newcastle). It is not yet too late to collect seed. Anyone wanting green pods of Cryptostylis subulata could contact the Editor -- soon.

A SIMPLE FLASKING TECHNIQUE.

This system is designed to use readily available materials and does not need laboratory facilities.

Materials Required.

1. A glass jar with wide mouth and screw top metal lid.
2. One or two compressed "jiffy" pots.
3. Small quantity of approx. 3/8 clean gravel, to support "jiffy" pot in glass jar.
4. Cotton wool.
5. Steel handled knife or any suitable tool for sowing.
6. Electric jug or kettle to boil water.
7. Domestic stove.

continued p. 55.

Victorian Group - Bulletin News. cont.

Method.

Cut approx. ½" hole in centre of metal lid.
Put gravel and "jiffy" pots in glass jar, when jar is on its side, arranging gravel to hold "jiffy" pot on its side when expanded.
Now put glass jar, gravel, "jiffy" pot or pots, knife and metal lid of jar in oven near door so you can work in the oven.
Bring oven up slowly to 300°F. and hold for 30 minutes, now allow to cool so as you can handle with comfort.
While oven is cooling, boil jug or kettle and allow to cool.
At this stage wash hands in bowl of weak Condys Crystals.
Pour enough water on "jiffy" pot to make it expand fully, this may take 15 mins. or so, allow small quantity of water to lay in gravel. "Jiffy" pot to lay on its side.
Now dip green seed pod in weak solution of Condys Crystals to remove fungus on outside of pod.
Now open pod in oven and sow with knife, on top of "jiffy" pot.
Seal then with metal lid and block hole with cotton wool after searing with flame or damping with Condys Crystals solution.
Jar is now ready to take from oven and place so it cannot roll over.
Keep it at a temperature of 65 - 80°F. After a period of one month you should be able to see life on "jiffy" pot and after approx. 8 months the small plants should be ready to deflask (if you are lucky). This method is not meant to replace normal flasking methods, but meant to be an interest to the hobbyist. I have seen it used with Dendrobium delicatum and soft-wood endrobiums and after eight months they were approx. 1½" high when deflasked and are now growing well.

THE IRA BUTLER COLLECTION.

Those members who attend Group meetings will be aware that Ira Butler passed away on the 19th. November last. Ira was pre-eminent amongst Australian native orchid hybridists and his many hybrids in the Sarcanthinae and Dendrobium sections have been admired at many shows and orchid meetings.
A.N.O.S. was extremely fortunate in acquiring his collection of Australian native orchids and native hybrids for dispersal through the Groups. To date, most of the Groups have taken advantage of the special offer made to them in respect of seedlings in 2½" and 3" pots. The balance of the collection will be offered to all members in the form of a priced catalogue of the large seedlings and plants through to the specimen show plants for which Ira was justly famed.
If you would like to participate in the possible purchase of these plants, please send a stamped, self addressed envelope to "Plant Sales Sub-Committee" A.N.O.S. P.O. Box C106, Clarence Street, 2000, IMMEDIATELY. We will then forward you a catalogue together with instructions regarding purchase of plants. Where more than one member is interested in a particular plant a ballot will determine the lucky purchaser. Remember, a stamped, self addressed envelope, NO money at this stage.

A.N.O.S. SUCCESS AT ORCHID SOCIETY OF N.S.W. SPRING SHOW.

The Sydney Group of A.N.O.S. achieved success with their first prize for Best Display of Australian Native Orchids and Hybrids at the Orchid Society of N.S.W. 1972 Spring Orchid Festival. Their display covered some 35 square feet and was a masterpiece of combined effort by nearly all the members of the Group. The highly banked display centered around a large piece of decorative sandstone from the centre of which a recirculating water pump supplied a very natural waterfall effect. I believe the pebbles in the creek below, were in fact, semi-precious Australian gemstones from the collection of Bob Lowe !

Phil Spence and Jack Jannese organised a superb display of New Guinea orchids at the Spring Festival in co-operation with the Papua & New Guinea Orchid Society of which they are members. Resulting from long distance team work, they arranged to have large numbers of cut flowers flown down from New Guinea for inclusion in the display. The growing plants from Phil's & Jack's collections really stole the show and flowering plants of Dendrobium sophronitis (which have individual flowers in bloom for over nine months) have to be seen to be fully appreciated. The result was a bronze medal from the Judges !

The Australasian Native Orchid Society

Statement of Receipts and Payments

General Account

	1971/72	1970/71		1971/72	1970/71
To Membership Subs.	411.50	557.75	By Printing & Stationery	55.98	64.18
" Bank Interest	86.22	81.08	" Affiliation Fee	5.00	5.00
" Flasking Receipts		10.00	" Petty Cash Expenditure & Postage	110.25	133.46
" Prize Money		8.00	" Prizes	15.00	12.20
" Surplus "Orchids in Colour"		71.11	" Advertising	25.50	51.00
			" Rent Annual Gen. Meeting	2.00	
			" Sundries	6.00	23.00
			" Flasking Refund		51.00
			" Typewriter		285.00
			" Typewriter maintenance	30.00	60.50
			" Excess of Receipts over Payments	247.99	42.60
	$497.72	727.94		$497.72	727.94

Publication Account

To Members Subscriptions	412.50	558.75	By Printing Etc. (Vol.3 No.12 to Vol. 4. No. 2.)	341.67	511.00
" Donations	51.50	22.60	" Binding Charges	30.00	104.25
" Sundry Sales	54.65	47.56	" Petty Cash Expenditure Postage & Mailing	151.69	110.14
" Binding & Sale Bound Orchadians	86.90	101.40	" Insurance	8.75	
			" Excess of Receipts over Payments	73.44	4.92
	$605.55	730.31		$605.55	730.31

Research Fund

Balance Carried Forward	1497.53	1438.48	Postage		6.00
Sale of Sarcanthinae Pub.	52.00	65.05	Commission	48.00	
			Balance Carried Forward	1501.53	1497.53
	$1549.53	1503.53		$1549.53	1503.53

STATEMENT OF FUNDS

		1971/72		1970/71
Balance at Bank 30th. June		1956.67		1631.24
Comprising				
Balance on Research Fund		1501.53		1497.53
Credit in General Fund	2586.53		2338.54	
Debit in Publication Fund	2131.39	455.14	2204.83	133.71
AVAILABLE FUNDS		$1956.67		$1631.24

NATIONAL HERBARIUM
LIBRARY
ROYAL BOTANIC GARDENS
SOUTH YARRA, 3141, VIC.
7 MAR 1973

[illegible]
Treasurer

I have examined the books of the Australasian Native Orchid Society for the year ended 30th. June 1972 and report that the above statement of Receipts and Payments is in accordance with those books.

D. Tomich
A.A.S.A. (SNR.)

New Shelves

THE ORCHADIAN

MAY, 1973.

Page 57.
Vol. 4. No. 7.

PRICE : 30 cents

Published by The Australasian Native Orchid Society

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THE DEATH OF Mrs. 'Kit' Murdoch.

It is with deep regret that we announce the death of 'Kit' Murdoch, the wife of our foundation President and first Life Member. I am sure all members join with your Council in expressing deep regret to Bill and family at their great loss. Recently they celebrated their Golden Wedding Anniversary and all who know Bill will realise how devoted this wonderful couple were to each other. 'Kit' had a very deep love of the bush and the flora and fauna therein. I can remember many happy hours spent discussing our native orchids with her.

I understand Bill will continue to live in their home at Coal Point and I am sure that all his friends will still receive a typical Murdoch welcome should they call.

MEMBERSHIP RENEWAL.

Remember your annual subscription of $2.50 is due on the 1st. July each year. Get your cheque off to the Treasurer now !

NOTES OF INTEREST.

The following items were noted with interest by your Editor in recent publications -

"Rare colour form of Sarcochilus falcatus R.Br., at Regional Conference" by Walter T. Upton in Australian Orchid Review, Vol.37. No.4. December, 1972. This article is a must for all native orchid enthusiasts and to whet your appetite I quote below part of Wal's article; 'The colour was the most outstanding feature, its perianth segments being flesh coloured (or perhaps apricot or pastel orange might be nearer) both inside and outside, the colour being constant all over with the exception of the very faintest of purple markings on the outside ribs of the sepals.'

A New Pterostylis for Victoria - Pterostylis aestiva D.L. Jones. My information from A.N.O.S. Victorian Group Bulletin, April 1973. I will publish the details of the publication of this new species in the next issue as they are presently not known to me.

A new Sarcochilus from north Queensland - Sarcochilus serrulatus D.L. Jones. In the December 1972 issue of the Victorian Field Naturalist.

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JUN 1973

ORCHID COLLECTING IN SOUTHERN QUEENSLAND.

Garry Wells

When my proposed orchid hunt to North Queensland was quashed only a matter of hours after its commencement, by an unfortunate car accident, I resigned myself to only a few brief day trips from a beach resort at Maroochydore, where my family and myself were holidaying, some 70 miles north of Brisbane.

In previous years my father and I have found the following species around Nambour, Mapleton, Kenilworth, Yandina and the Sunshine Coast; *Bulbophyllum aurantiacum*, *B. crassulifolium*, *Cymbidium madidum*, *C. suave*, *Dendrobium aemulum*, *D. gracilicaule*, *D. kingianum*, *D. linguiforme*, *D. monophyllum*, *D. mortii*, *D. pugioniforme*, *D. speciosum*, *D. teretifolium*, *D. tetragonum*, *Liparis reflexa*, *Plectorrhiza tridentata*, *Rhinerrhiza divitiflora*, *Sarcochilus ceciliae*, *S. falcatus*, *Calanthe triplicata*, *Cryptostylis subulata*, *C. erecta**; *Dipodium punctatum*, *Geodorum pictum*. * unlike its habitat in the Sydney area, *Cryptostylis erecta* is quite a rare orchid.

Basically, the aims of the hunt were: *Bulbophyllum minutissimum*, *Dendrobium gracillimum*, *D. delicatum*, *Parasarcochilus weinthalii*, *Peristeranthus hillii*, *Phaius tancarvilliae*, *Plectorrhiza brevilabris*, *Schistotylus purpuratus* & *Taeniophyllum wilkianum*.

In the area around Mapleton lies a State Forest (parts of which are closed to the public, thus precluding collection and the salvation of native orchids dying on fallen trees. The mountains are relatively low (increasing in height around Kenilworth and Jimna) and it was on these that *Persiteranthus hillii* was found growing in fairly dense shade conditions, in moist country, often in low positions on the host trees. In our experience all of the trees had fibrous bark. In this area grew *Cymbidium madidum*, some only a few feet from ground level, often in large clumps. Thus, it seems this orchid can tolerate considerably more shade than its relatives *C. suave* and *C. canaliculatum*.

Calanthe triplicata in full bloom, evident only by the magnificent spikes of white flowers flourished in the weak light (a dozen flowering plants were seen in an area 10' square).

Two years previously, a lookout, Point Glorious by name, proved a fruitful venture, so, in an attempt to find *Dendrobium delicatum*, we attempted a revisit only to fall victim to the totally inadequate Queensland signposting. It was raining and the roads muddy, we found ourselves caught between two sides of a gully, neither of which the car was able to climb. Unable to turn around, we were forced to take a run-up and, in reverse, hope our momentum and my pushing would somehow permit the car to climb the frictionless hill. Not scientific but definitely effective.

A week later we searched the area around Kenilworth, which is slightly more moist and a little higher country than around Mapleton. There had been forestry operations removing pines and box trees, the remains of which we searched. *Plechorrhiza tridentata* was quite common, large plants not inclined to form the masses of plants which occur in tangled balls, in the moist, shady forests of New South Wales. *Dendrobium gracilicaule* occurred in the area, again a much larger plant with leaves to 6" long and racemes to about 4", and not inclined to grow into big clumps, all over the trees as is its manner of growth in New South Wales. On a tree which once stood about 10' high was an orchid apparently new to us, subsequently identified as *Schistotylus purpuratus* growing amongst other smaller plants of the same species. The largest plant measured nearly 2½" across and was in the twiggy parts of the tree, overhanging water. Sheltered by the thick leaf growth of the overhanging foliage. On the same twigs I spotted another of the *Sarcanthinae* section which must have been *Sarcochilus hillii*. Something of a surprise in the hotter Queensland bush, the temperature and humidity proving a barrier to many of the New South Wales and border species (e.g. *Sarcochilus hartmannii* and to a lesser extent *S. falcatus*). Perhaps the best find of the day was a damaged specimen of what was probably *Parasarcochilus weinthalii*. This particular plant certainly was not *Sarcochilus olivaceous*, the leaf being too thick and not, and not *S. falcatus*, as it had a light coloured dead flower spike (also any *S. falcatus* in the area seem to shun the rainforest in preference to open trees, not unlike their habit on the Atherton Tableland). In the same area away from the creek and on fallen box trees was a fair amount of *Dendrobium tetragonum*, *D. linguiforme* and *D. mortii*. Plants of *Dendrobium teretifolium* also occurred, apparently in two forms, i.e. the standard var. *aureum*; long lightish green leaves with a tendency to form long straggly plants, as opposed to thick, wide plants of the tougher var. *teretifolium* with knobbier stems, darker leaves, and with the racemes clustered in groups of 2 - 3, around the recent leaves. Having flowered a plant of this type in Sydney, it seems pretty certain it is *D. teretifolium* var. *teretifolium*, which is interesting since this area is well above the usual stated northern-most limit of the species.

continued p. 59.

Orchid Collecting In Southern Queensland. cont.

A tree which grows in the area, has a corky, spongy bark, which would be inclined to hold moisture and is a favoured host for Dendrobium tenuissimum in the Bellangry area of N.S.W. However, here no D. tenuissimum occurred though Bulbophyllum aurantiacum, B. crassulifolium and B. exiguum lay in large quantities on the fallen timber, generally in the moister areas of the tree i.e. at the junction of the main trunk and branches, on the underside, and at lower levels on the tree. On the way home we stopped to drool over a Dendrobium aemulum on an ironbark measuring roughly 2 feet by 18 inches. For some reason, younger plants grew near the base of the tree, as both forms of D. aemulum do (though perhaps it is inaccurate to speak of both forms, since others may exist, the author having seen plants on rock and on a Casuarina sp.). On a ridge in sheltered places, Oberonia muelleriana was found growing on ironbark, 4 or 5 clumps in all, well out of the neighbouring thick forest. Felled ironbarks were examined, yielding many plants of Dendrobium aemulum in poor condition, even though they had been down only a season. Starngely, Sarcochilus falcatus grew on the underside of the ironbark branches, a position it seems to favour, being quite a rare orchid in the region.

I had been informed that this area was "minutissimum country". This, I doubted. It grows on Tamborine Mt., but books read were unsure of its range, or vaguely stated "South Qld. & N.S.W.".

North of Maroochydore stands a great rock with what seemed like lush grass on its top. Not being confident about my rock climbing ability I followed a path through a quarry which diverged from a rough road,along the sides of which grew Geodorum pictum in large quantities. Flowering with the typical "shepherds crook" shaped spike, all with the pinkish flower never opening far enough for the beautifully coloured labellum to be easily visible. The walk to the top was uneventful, any further Geodorum pictum being well hidden by the thick grass it chooses to grow amongst. Reaching the summit the "green grass" proved to be a tough prickly 3' high plant, stunted by the conditions and apparently recently burnt. After a struggle to the south side it was evident the approach was to be made from below. Dendrobium kingianum appeared though, fighting to show itself above a particular kind of very prickly grass it seems always to grow with, the plant often entirely enclosed by dried out grass. The climb from below, my father and I attempted the next morning.

The approach was through a riding school and the road took us to the base of the mountain. It took 5 minutes to find the first dead Dendrobium kingianum. The remains of hundreds of charred 'kingies' covered much of the huge rock face with only a few survivers in the affected areas. For some reason, the result of this fire and its affects on the Bulbophyllum minutissimum populations did not occur to me for a while, sitting unhappily amongst the crunchy, dried-out D. kingianum, I thought that the Bulbophyllums could not live on a dry, hard, outcrop like this anyway, and surely it could not exist through a bush fire. Returning to my father who had gone in the other direction around the mountain, I was surprised to see him bounding towards me with more than his usual spriteliness. It appeared that he had found something!

The Bulbophyllum minutissimum grows on low rocks facing south (not in moss, nor in a particularly protected area) in a small clump with reddish - green pseudobulbs and tiny leaves, though it is said to grow in large masses in certain areas (perhaps these large pieces were destroyed in the bush fire). It is not an easy species to spot, my father drove home still not quite sure how he managed to find it!

Another tiny, though I am assured not uncommon orchid is Taeniophyllum wilkianum which grows on twigs and small branches of a smooth barked tree which grows to about 12' high. Again this infrequently found leafless plant was seen first by my father! It looks like a recently dead Sarcochilus hillii, minus leaves, with a root system extending at most to 6", at times it is difficult to tell where the orchid is when only a single root is present, both ends looking similar. Usually the presence of Taeniophyllum sp. is indicated by the tiny yellow-green seed pods. As well as in gullies off Image Flat Road (from Nambour) this orchid occurs in North Queensland, where we saw it in flower in Mossman Gorge. Unlike another North Queensland leafless orchid, Chiloschista phyllorrhiza, which carries in its ribbon-like roots the agent of photosynthesis, the Taeniophyllums seem to have no way of photosynthesising since chlorophyll is not evident. Taeniophyllum sp. grow fairly close to a source of humidity i.e. streams or rivers.

Geodorum pictum, being quite a common orchid near the coast, is not a great find though I was very happy to find an interesting variation from the norm.

Across the Maroochy River a grove of mango trees has survived where the owner evidently

continued 60.

Orchid Collecting In Southern Queensland. cont.

has not and our family visits the trees usually every year. Geodorum pictum grows in the grass around the trees and underneath them though they seem to make extremely irregular appearances. On the outskirts of the trees I investigated a particularly heathy clump of half a dozen plants and on scrutiny a variegated plant growing alone a foot from the others revealed itself. It would be interesting to know how this plant came about, whether its yellow and green colouring is genetic, or due to environmental influences e.g. virus infection. Our little 2 horsepower engine chugged us all back to the other side of the river - 3 people, a Labarador named Caesar, 8 dozen mangoes and one Geodorum pictum, all stuffed into an 8' dinghy.

In the Noosa area once grew Phaius tancarvilliae and Liparis simmondsii (the latter with its red flowers so unlike the typical Liparis green). We hunted unsuccessfully for these, particularly the Phaius (now a rare orchid in the southern part of its range) in swamps from Caloundra to the Tewantin River. It is evident that any remaining Phaius in National Parks should be vigorously protected.

By sheer chance, while in the Noosa area, we happened upon a small piece of bush surrounding a lookout from which we wanted to view a "development" chewing away at the south shore of the Noosa River. Dendrobium linguiforme was seen in the trees, after which my father found Plectorrhiza brevilabris in full flower, growing much like P. tridentata. A fairly common plant in the north of Queensland in our experience, we were surprised to have found it so far south even though it had been recorded earlier around Noosa. Soon after, another surprise, Bulbophyllum minutissimum was seen growing on the south-eastern side of a smooth barked, 20' high tree, at about shoulder height, in moss. Not very far away, on a young pine tree with flaky, red bark, a healthy Peristeranthus hillii grew about 4' from the ground.

This is an informal record of a recent set of trips. The finding of the orchids in the bush was mainly by chance, therefore no really thorough search of the area was possible.

Garry Wells

MEANDERINGS FROM MULLUMBIMBY.

Russ Maslen

Every time I contact our esteemed editor (quite frequently) he continually demands that I write a story of this little corner of the North Coast of New South Wales. I think this probably saves him work digging up material for The Orchadian. Since I will probably continue to ring him every couple of days, I have finally given in and put pen to paper and thereby keep his blood pressure down and also get him off my back!

When my holidays come due, I usually stay home (nominally), because there is so much interesting country to see within 50 miles of here that I will probably never manage to see it all, let alone the orchid life particularly, or all the creeks, mountains and forests. A couple of days ago I went for a meander up into the McPherson Range area and saw antarctic beech (Nothofagus moorei) in quite large amounts and all loaded with Dendrobium falcorostrum. However, since this area is a few hours drive away, I decided to go for a trip into the forest a lot closer to home this afternoon. It would be quite eighteen months since I was last in this particular spot.

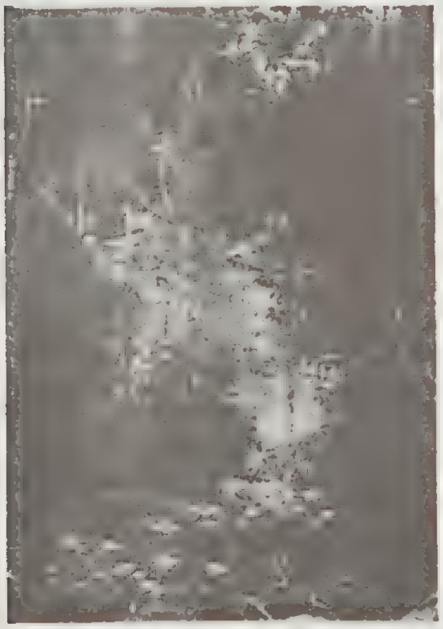
Driving through Eucalyptus forest leaves me somewhat cold as I am essentailly a rain forest type (yes, we do have some left) so I made a bee-line for this particular little creek and its associated rain forest. Driving as far as I could along the forest track I finally parked in a shady spot and rambled off down the track. The big brush box (Tristania conferta) beside the car had quite a few good specimens of Dendrobium aemulum hanging on its scaly bark and most of the sawn off stumps on the way down the track had Cymbidium suave poking their leaves up from the cracks.

Nothing much else on the way down to the creek (I love forest creeks, water bubbling over little waterfalls, clear pools and all that), but when I started up the creek the odd orchid started to show in the trees and on the rock ledges. First to be seen was Dendrobium kingianum, only a few, but quite nice. A water gum (Tristania laurina) overhanging the creek took my eye and looking on the small branches and twigs the leaves of Papillilabium beckleri and Plectorrhiza tridentata were soon found by following the roots along the branches to the small plants.

A brush box (Tristania conferta) on one side of the creek had a few plants of Dendrobium aemulum and I noticed a couple of Sarcochilus olivaceus plants at the base of a small Tristania laurina. A green covering on a dead tree took my eye and on a closer look

continued p. 62.

Meanderings From Mullumbimby. cont.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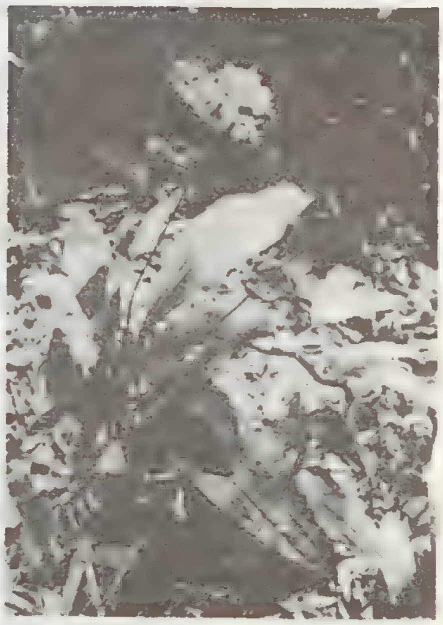
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1. Roland's Creek - lower section.

2. Roland's Creek - the Rapids.

3. Roland's Creek - *Calanthe triplicata*, old flower stem shows.

4. Roland's Creek - down the rock shelves.

5. Roland's Creek - face of the waterfall.

6. Roland's Creek - waterfall from the side.

7. Roland's Creek - top of the falls, note *Dendrobium speciosum* in tree - top left.

Meanderings From Mullumbimby. cont.

Bulbophyllum exiguum was seen to be almost coating the trunk. Funny how this species seems to like dead trees. I often feel that orchids are rather silly things when I find them growing on a dead host, because eventually they end up a dried mass on the ground. In areas like this I do not normally look high up the trunks of trees because the smaller trees usually prevent one from seeing very far up. A fairly large pool in front of me looked very peaceful and the trees on either side leaned out over the water.

A Bangalow palm (Archontophoenix cunninghamiana), that's an awful name to spell, had a few little green leaves on it's side about 10 feet up and lo and behold, Sarcochilus hillii, one plant only. A fallen log over the left side of the pool showed a plant hanging underneath and proved to be Cymbidium suave growing from a hole formed by a broken off limb and only about 4 feet from the water level. More green leaves to the other side of the pool were Dendrobium tetragonum in quite large numbers. A look up one of the overhanging trees and yours truly looked again, harder. Yes, half a dozen plants of Oberonia palmicola showed their crested shape to my wide open eyes. Quite an interesting find, because there is not much of the species to be found around here.

Tearing myself away from this pool and carrying on regardless revealed more Papillilabium beckleri and Plectorrhiza tridentata, usually on water gum and always overhanging the water. A little further up we came upon a waterfall of about 100 feet in height, which accounted for the increase in sound of the water. No way of going up this fall so I headed off up the slope on the left, to skirt the cliff face and get to the top. My first few steps into the bush brought me to a plant of Calanthe triplicata, but not in flower. More Sarcochilus olivaceus was noticed low on the trunk of a small shrub.

Ducking under a fallen tree brought me face to face with quite a large Golden Orb spider and since his web was right across my only path I had to break the golden strands and collapse the web. Looking up again I saw a piece of Dendrobium linguiforme hanging by a thread from the scaling bark of another dead tree.

The climb brought me out into completely different country, with forest oak (Casuarina torulosa) predominating. One other tree had quite large plants of Dendrobium linguiforme on its trunk, but no other orchids were seen until I worked my way down to the top of the falls. The first thing I noticed, which rather surprised me, were quite large paperbark (Melaleuca sp.) trees growing in the boggy, grass covered soil, just back from the shelving rock on the top of the waterfall. Dendrobium kingianum plants were growing in their usual place on the rocks near the water and on a tree growing from the cracks in the rock. In the centre of the cliff top were three medium sized clumps of Dendrobium speciosum. Waving in the breeze from the same tree were several plants of Dendrobium teretifolium. Another tree some thirty feet from the cliff edge showed green leaves and on closer inspection it proved to be Sarcochilus hillii in full bud. A large plant of Plectorrhiza tridentata was also on the same tree. Once again a dead tree. An examination of the trunks and twigs of the trees in this area revealed quite a number of Sarcochilus hillii on the paperbarks as well as scrub trees. Dendrobium linguiforme, Dendrobium aemulum and Dendrobium tetragonum were quite plentiful. One large plant of Dendrobium tetragonum was very well guarded by three quite healthy jumper ants who looked as if they were spoiling for a fight. I did not oblige.

Glancing up into the scrub on the relatively flat ground to the left I spotted a flash of white in the undergrowth. Walking up to it brought me into almost a grove of Calanthe triplicata, mostly in flower, but ranging in size from very young specimens to quite old ones. I did not try counting them but the total would have been 30 odd in flower and they extended well back into the scrub. However, back to the creek where I admired the four lobed labella of Calanthe triplicata and then, not more than 2 feet from the bank was another plant, a really large one, with a head of flowers approximately 4 feet high. Moving further up the creek revealed more Dendrobium linguiforme and D. aemulum, but then gradually the orchids disappeared and no more were noticed for some distance until an occasional Sarcochilus olivaceus appeared low on the tree trunks. Looking at my watch I discovered the time was nearly 5 p.m., so I thought the time had come to head back. But just a few more yards first ! Another Sarcochilus olivaceus about 2 feet from ground level and a glance up the trunk and there were the dark green leaves of Rhinerrhiza divitiflora. However, time was flying and I still had a mile of rocky, shelving creek and a waterfall to negotiate, plus a steep uphill climb back to the car. When about 20 yards from the car I spotted something dark in colour, on the ground, beside the car, up flew a Satin Bower Bird. No doubt he was wondering how to get a green Renault 10 back to his bower !

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Meanderings From Mullumbimby. cont.

As I sat in the car getting my breath back I could not help but think how lucky one is to live in an area like this, where I can drive three quarters of an hour from home and be in another world such as this little creek. I pity you city dwellers, who really have to go on safari to be with nature, be it orchids, trees, creeks or Satin Bower Birds. Tomorrow, probably, another creek, another piece of rain forest, different orchids and another afternoon of peace and tranquility.

Russ Maslen, 1 Tyagarah St., Mullumbimby, N.S.W.

CHILOGLOTTIS CORNUTA Hook.f. IN SOUTH AUSTRALIA.

Marian Beek

Yes, Kevin Johnson has done it again ! He has found a new orchid for South Australia. He really has a knack for finding unusual things. First he has rediscovered *Pterostylis concinna* for our state and now this !

Kevin lives at Nangwarry, a little town tucked away amid pine forests. Many swamps occur in that area and some of them contain sphagnum moss which is not common in our south-east. One day, in summer, when he was collecting this moss for his bush house, his attention was suddenly caught by some dried brown seedpods carried on 4 inch stems. 'Orchids' he thought and on closer inspection he found 6 shrivelled up plants. Each plant had only 2 leaves. He was puzzled, as only *Chiloglottis* species grow like that and this orchid is uncommon in South Australia. Some years ago, Kath Alcock found a small colony of *Chiloglottis trapeziformis* in a pine forest at Comaum and that was the first and only find of this genus in South Australia. But now - this !

It was a very excited young man who visited me to tell me of his find. He also showed me the dead seedpod and leaves. There was no doubt about it, it was a *Chiloglottis*. But which one ? Only time could tell. That was in January 1972.

That year he often visited his precious spot and to prevent any interference from rabbits or intruders, he fenced it off with wire netting.

In August 1972 he noticed ten plants. A month later they were flowering. Delicate pale green flowers, about an inch wide. *Chiloglottis cornuta* ! What a find !

Further searching located several more colonies, containing groups of about five, six, or seven plants.

Ray Nash and Mark Clemments came down a week later and together with our orchid group, we visited "*Chiloglottis* Swamp". It was a hot day, but the beautiful green flowers were unaffected by the heat and looked most delightful with their spreading, pointed, petals, hooded back sepal and very interesting labellum, covered with neatly arranged small stalkless glands. Another exciting find were two flowering plants with brown tipped labella and dark brown glands, which gave the flowers a more striking appearance.

Besides the *Chiloglottis* we noticed many "Sun Orchids" in that swampy area. *Thelymitra pauciflora* and *Thelymitra ixioides* grew in thick clumps and a few weeks later when we visited that swamp again we had another marvellous discovery: a pure white albino *Thelymitra ixioides* ! Has anyone ever seen this before ?

Marian Beek

TERRESTRIAL ORCHID TUBERS FOR THE NATIONAL HERBARIUM.

The National Herbarium of New South Wales is currently expanding its activities and would be particularly appreciative of Australian native orchid terrestrial orchid tubers. They now have the facilities and trained personel to undertake their cultivation and ask that anyone interested in donating tubers should post or deliver them to Mr Lew Forest, National Herbarium of New South Wales, Royal Botanic Gardens, Sydney, N.S.W. 2001.

WARRINGAH GROUP'S CONSERVATION-TRAINING PROGRAMME.

Margaret Spence

The members of the Warringah Group of A.N.O.S. have been busy over the past months planning and working on the development of an area within the Stony Range Flora Reserve in Dee Why, Sydney. This area is for the conservation of orchids and the training of members not fortunate enough to have bush houses or yards in which to grow their plants, even the 'experts' may learn something !

The area we have taken over is on a hillside in the north east corner of the Reserve, with a gully of tree ferns and other native trees, shrubs and grasses. Through this gully runs,

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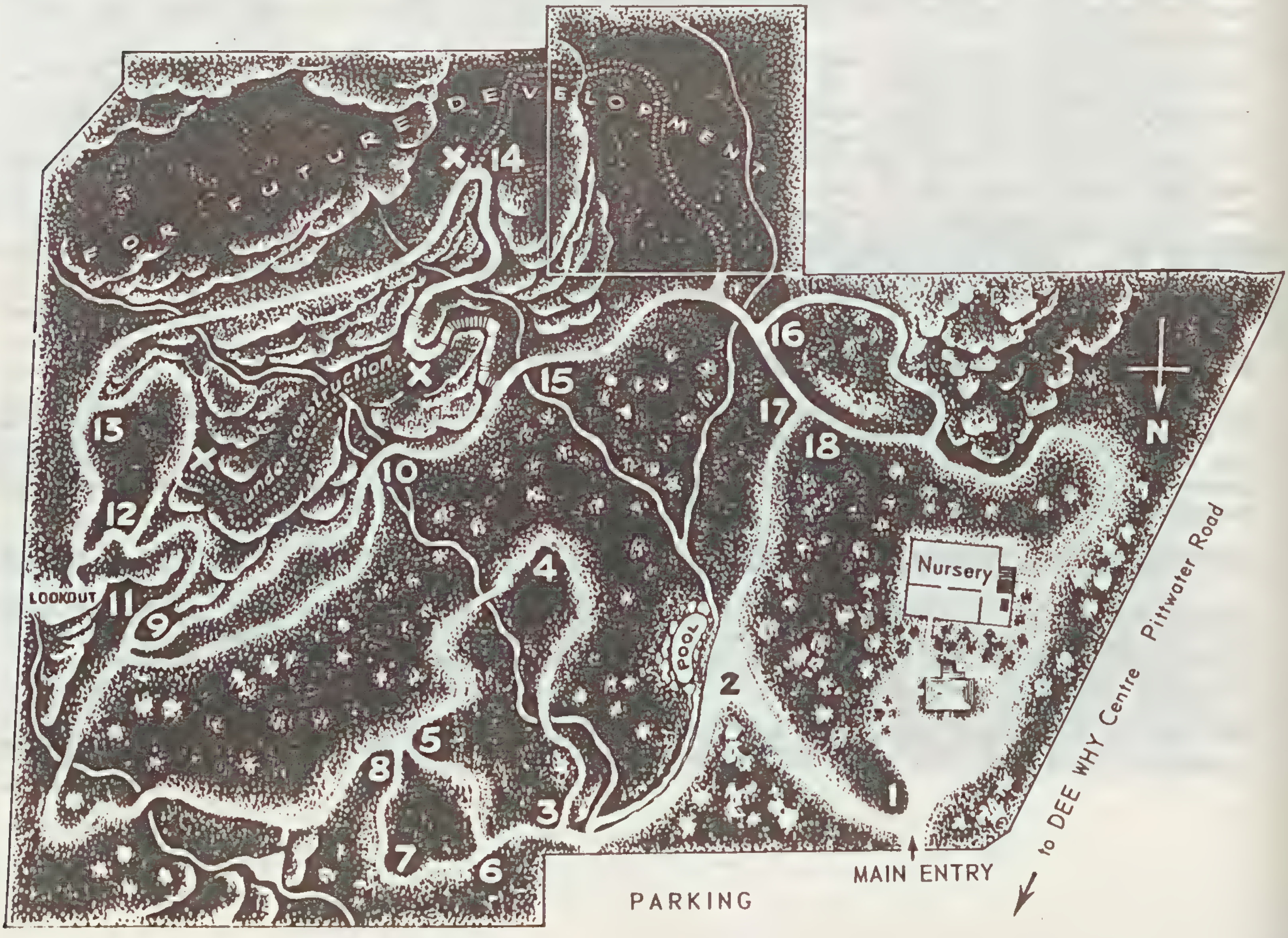
WARRINGAH GROUP'S CONSERVATION-TRAINING PROGRAMME. cont.

during rain, a steep rocky creek. There is already a path but this will have to be extended and developed to make it a through path, (see map). The path curves around and you can see practically the whole area from both approaches to the creek.
Members have already weeded out grasses and pruned dead branches, cleared an area of the creek bed higher up stream and built a small retaining wall.
As the creek will be our main feature as far as visitors to the Range are concerned, our members have worked hard and built a concrete bridge which is some 12' in length and 3'6" in width. Along each side of the bridge telegraph poles have been placed. The bridge will be covered with sandy soil, giving the effect of a log bridge, on these logs we hope to grow Dendrobium speciosum etc.
Just downstream from the bridge, we have dug out a large hole, about 8' deep in spots, to create a large pool. We have cemented the bottom and raised the retaining wall area to retain water and eventually create additional humidity for growing our native orchid species.
In the rock crevices along the sides of the creek we have already planted Dendrobium linguiforme and these are doing very well. In the tops of the birds nest ferns (Asplenium nidus) we have planted, as a temporary home, some Dendrobium kingianum. On the rocks leading up to the creek we hope to establish Dendrobium linguiforme, Sarcochilus hartmannii and in wet crevices, Sarcochilus fitzgeraldii. Either side of the bridge there are flat areas where we have placed split log seats for those of us who can't take it all in at once and feel the need to sit and look. Near these seats we hope eventually to plant terrestrial orchids.
The men recently were able to collect some tree ferns (Dicksonia antarctica) and these will be positioned in choice spots in the area.
The gully where tree ferns are already established has a sprinkler system in operation and in this area we intend to plant cedars and other native trees to create a rain forest area. Members of the Warringah Group have donated plants from their collections, but, eventually we hope to have the generous help of other A.N.O.S. members to make this project something that every member of A.N.O.S. can participate in, and enjoy.

M. Spence, 11 Milham Crescent, Forestville. 2087. Secretary, Warringah Group of A.N.O.S.



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THE ORCHADIAN

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MEMBERSHIP RENEWAL.

Annual subscriptions are due on the 1st. July, for the ensuing year. Send your cheque or order to the Society today. Remember $2.50 is the sum!

ANNUAL GENERAL MEETING.

The Annual General Meeting of the Australasian Native Orchid Society will be held at 10.00 a.m. on the 29th. September, 1973. The meeting to be held at the home of Jim Walker, at 27 Stafford Road, Artarmon.

Close of Nominations will be the 6th. September, 1973. Date of Election is 27th. September, 1973.

The Annual General Meeting is being held in the home of Jim Walker to help reduce costs and overheads involved in hiring suitable accomodation. Remember all financial members are most welcome.

To further reduce costs it has been decided not to post nomination forms to members this year. To post copies to every financial member is a very expensive operation and in past years we have never received more than 6 correctly completed nomination forms from our total membership. Should you wish to nominate a financial member of the Society for Council, write to our Hon. Secretary today, requesting a form.

A.N.O.S. - ORCHID SOCIETY OF NEW SOUTH WALES. LIASON OFFICER.

The Orchid Society of N.S.W., in continuing its forward thinking policies, has elected several of its senior Committee members as Liason Officers. These officers have been delegated to assist affiliated societies within certain geographical areas. The aim of the scheme is to bring about closer understanding of common problems and hopefully to reduce, or eliminate them.

Members continually ask Councillors, 'how can we affiliate?' The answer is very simple! The Australasian Native Orchid Society is affiliated with the Orchid Society of N.S.W. and therefore all A.N.O.S. Groups are automatically affiliated. Through our affiliation with the O.S. of N.S.W. we are in turn affiliated with the Australian Orchid Council. You may not be aware that only one society from each Australian state constitute the Australian Orchid Council. We are fortunate in having A.B. Porter as our Liason Officer.

RESIGNATION OF COUNCILLOR.

At the June meeting of your Council, the resignation of Phil Spence was received with much regret. Phil and his wife Margaret have long been stalwarts of the Society and its two Groups in Sydney. Phil was very active on the A.N.O.S. Council sub-Committee which prepared the many draft forms of proposed Standards for judging Australian native orchids and their hybrids. After very many months of discussion and correspondence this sub-Committee produced a set of standards which have been presented to the Orchid Society of N.S.W. for submission to the Australian Orchid Council.

We hope to be able to tell you more of their efforts in the near future. We thank you Phil!

ANTARCTIC BEECH (Nothofagus moorei) - THE SAWMILLER V's THE CONSERVATIONIST.

The following articles concern the present logging of Nothofagus moorei in the Wiangarie State Forest. The first is a statement, aims & objectives of the Border Ranges Preservation Society and the second, a two part article by Glen Hall in "The Northern Star" on the 8th. and 9th. of March.

Border Ranges Preservation Society.

North East Corner: N.S.W. - Logging of Wiangarie State Forest - Tweed Range.

As a result of very extensive logging contracts having been let by the N.S.W. Forestry Commission to Standards Sawmilling Company, Murwillumbah N.S.W. and to Munroe & Lever, Sawmillers, Kyogle N.S.W., permitting them to log some 20/30,000 acres of Wiangarie State Forest (including Tweed Range), a number of conservation minded people from Southern Queensland and Northern N.S.W. held a series of inspections and on-the-spot meetings in order to determine what course of action should be undertaken to form the basis of a campaign directed towards creating a public awareness of the urgent necessity to preserve large areas of rainforest and allied high rainfall flora which predominates on all of the elevated regions of the Border Ranges complex.

This Society submits that all logging operations should cease above the level at which rainforest species currently predominate, and that these regions be declared National Parks.

W.J. Gasteen
Convenor & Acting
President.

Aims and Objectives.

1. The cessation of all logging on elevated areas of Tweed Range and Wiangarie State Forest at which levels rainforest and allied high rainfall species predominate.
2. The declaration of entire Tweed Range, from Mebbin (Hanging) Rock in the south (10 miles north-west of NIMBAH) to the Queensland - N.S.W. border, a National Park. Thus Tweed Range would join Lamington National Park along Queensland - N.S.W. border, creating a large wilderness area as an outstanding National Park common to both states.
3. The declaration of Levers Plateau rainforest (north-west of Kyogle and joining Queensland - N.S.W. border) a National Park.
4. To submit considered proposals to N.S.W. Forestry Commission for a long term plan concerning re-afforestation of certain areas of Northern N.S.W.

Convenor & Acting President.
W.J. Gasteen,
89 Longman Terrace,
Chelmer. Brisbane. QLD. 4068.

Hon Secretary.
J.G. Brown,
3 Morrison Avenue,
Mullumbimby, N.S.W. 2482.

What God Hath Wrought, What Man Has Destroyed

from "The Northern Star" by Glen Hall

FOREST LINKS WITH ANTIQUITY FALL TO SAWS

My inclination in these days is to avoid newspaper controversies. Only a sense of moral outrage, plus some knowledge of the irreparable ruin being wrought there forces me to say my piece in defence of the Borderland Range forests.

Correspondence in "The Northern Star" should have stated the problem clearly enough. "Selective" logging has begun in the Ranges, objections have been raised, the Minister has written an apparently reasoned reply, stating that, in his opinion, selective cutting of matured timber should continue, and finally Mr. Brown, of the Border Ranges Protection Society, has launched a powerful counter-attack. Good for him!

In certain low company, which I sometimes keep, I would shout "You little beaut"! In more refined circles, to which I am occasionally admitted, I would gently breathe, "May his tribe increase".

He has, like a good general, attacked on a broad front, so that some, at least, of his forces must prevail.

ONE COPSE

I will join in the attack on one single point only. Indeed, I shall confine myself to one single copse of dark-green timber, comprising just a few trees. But what trees are these ?

continued p. 67.

Forest Links With Antiquity Fall To Saws. cont.

Let me tell you about them, that your readers may know what God hath wrought, what man hath destroyed.

They are the Antarctic Beeches.

Beech trees and shrubs are widely distributed throughout the continents of the world. Family, Faguceae. A valuable timber, the European beech (Fagus sylvatica) and the American variety (Fagus grandifolia) are each picturesque and commercially valuable. (World Book, Vol.2).

Early botanists erroneously named several Australian tree varieties as beeches. They were quite mistaken. Actually there are only three truly Australian species. (Australian Encycl., Vol.1).

To distinguish these from their European and American counterparts they were named Nothofagus. The name means False Beech. It is of course, no more false than the platypus and echidna are false.

It is just Australian beech - three kinds. The first, N. gunnii is merely a shrub growing eight to 10 feet in height and may be dismissed. The second, N. cunninghamii is confined to Tasmania, especially in the remote western mountain regions, so this too, does not concern the present argument.

DISCOVERY

But the discovery of the third species, the Antarctic Beech, N. moorei, really set the botanists and paleobotanists speculating. An Antarctic expedition - I believe it was Mawson's - discovered the genus, if not the species, preserved in Antarctic glaciers.

Many students and scholars have suggested that a land bridge existed from the Antarctic to the Australian continents and at least one authority is convinced that Nothofagus came northward in pre-tertiary ages from its southernmost origin. (Leon Crozat, 1952). It is generally thought to be slowly dying out.

These arguments are strongly reinforced by the existence of Nothofagus in Patagonia and Southern Chile, and perhaps further strengthened by more recent submarine surveys. (Aust. Encycl., Vol.VI).

Be that as it may, most students in my particular copse to be of great antiquity, even as much as 3,000 years old.

To the destroyers who may wish to bash me over the head for writing nonsense, let it be admitted, there is no real evidence, as yet, for verification of such age. But - man alive - they are very old! European beeches are estimated to live 900 years. (Ency. Britt., 1963 ed). Could this dark green copse of "nigger-head" beech have been growing just there, in the rain forest, when Christ was telling the people about the Way and the Truth - and being crucified for it ?

ROOTS EXPOSED

It seems quite likely. The great roots are exposed for several feet above the ground, as though the soil has been eroded over the centuries. Perhaps this ridge was so much higher, then.

That, then, is the likely history of these few trees that we are holding in our gunsights. Few enough, for their distribution in this land of ours was always very limited, and again we are left to speculate just why.

Even when settlement was sparse they were never very common, for their habitat is restricted, both horizontally and vertically. Laterally they spread from the southern-most limit around the Barrington and Gloucester area to their northern limit in our Macpherson Range. Vertically they appear to flourish only on the high ridges of rain forest, generally above 2,000 feet or (610 metres).

Incidentally, orchid lovers would be interested to know (but they probably do) that our Antarctic Beech is virtually the sole host to their lovely epiphyte, D. falcorostrum (the beech orchid). What would be their thoughts upon seeing four "tough" Toyotas loaded with falcorostrum emerging from the rain forest? This happened.

But have we understood the extremely limited range of our Antarctic Beech ? Some stands still exist, to be sure, notably round Dorrigo Plateau, but further north than Lamington National Park you will not find them (unless you fly up to the Highlands of New Guinea).

FEW HUNDRED

Could I be accused of exaggeration if I suggest that probably we have only a few hundred such trees left ? Frankly I din't know, but if someone cares to take me up on it and convince me we have a few thousand, I'll thank him sincerely and feel greatly relieved.

At present I can only say with certainty that the mills have been getting it, and unfortunately,

continued p. 68.

Forest Links With Antiquity Fall To Saws. cont.

evidently with the approval of the Minister for Forests and his officers. The lovely timber makes good furniture, and is used in another industry, the making of recorders.

Now I am all in favour of kids playing recorders, but my plastic one has equally as good a tone. I'll play the new Australian anthem on it when we get one, but I'm most concerned with what we'll have left to sing about. I might even submit an entry myself!

Let's see:-

Australia, the land of the free,
Where we cut down every pre-historic tree - etc.

ANTARCTIC BEECHES ON LIST IN RAVAGING OF FORESTS.

We, as a people, have little left of the natural beauty and national resouces that we took from the Aborigines little over a century ago. In the Richmond Valley where we live the rain forest has gone - forever.

True, we have a Nightcap National Forest of some 32,000 acres, but this is "improved" and managed for us, as anyone can see as, year by year, the roads and bulldozer tracks erode and erase the natural area.

My regional map indicates the Nightcap National Park, but, lest any man should boast, let him know the facts: the National Park consists of two small areas of 120 acres and four acres respectively.

These were all that was set aside as such when the Nightcap National Forest was proclaimed in 1937 by the then Minister for Mines and Forests, Hon. Roy Vincent. (My references: Richmond River Historical Society Archives).

Should any reader imagine I am just an old "knocker" against all governments let me assure him he is only partly correct. Indeed I admire the achievements of the N.S.W. Forestry Commission over many thousands of acres of the rough scrub-wallaby country that has been and is being regenerated. But this is not the point of argument.

FIVE POINTS

Again I quote from the then Minister's declaration of Nightcap National Forest: "...National forests are designed to serve the community in a five-fold purpose viz:-

1. To produce timber - without which community development would be inhibited or impaired.
2. To protect our watersheds - lest floods and erosion ruin the countryside.
3. To develop the recreational values of the native woodlands in the service of the tourist industry.
4. To conserve the wild life of the bush - and maintain the balance of nature.
5. To utilise the incidental grazing values of the forest - and supplement the grazing industries of the region.

These, then, are the official aims and purposes of National Forests. "The Northern Star" of May 17, 1937, will give an idea of the back-scratching that went on at the official declaration on May 15, 1937.

Now how anyone protects our watersheds (Item 2) by felling the timber and driving bulldozer tracks through the forest I cannot understand. Nor can I reconcile Items 1 and 4, i.e. the drawing off of commercial timber without upsetting the balance of nature. Any silly galah, parrot or cockatoo knows that nesting hollows are found only in mature trees, and not in regenerated forest. So he flies off elsewhere, though by this time he must be finding it hard to discover where to go.

Still, we need our national forests and are fortunate in having some good ones. But why be hypocritical about them? Let's call them by their right name. They are State business enterprises.

We have some well-managed ones and we probably should have more. Let them keep on. Nightcap National Forest is mentioned here merely as an example of what we don't want. For we do not have any wilderness reserves - no great national park, like Lamington for instance, and we are now busily logging out our last chance of having one. They have already cut a number of our few remaining Antarctic Beeches.

ONLY SOLUTION

This is the message that must be delivered, loud and clear, to the Minister in charge and to all in the corridors of government authority:-

You are our representatives - you are not our masters! We want this range preserved inviolate

Antarctic Beeches On List In Ravaging Of Forests. cont.

(what is left of it). Australia is vast enough and rich enough to afford it.

You can do without your business enterprise here! We do not even want you to build roads through it, thank you! Some walking tracks if you like, and rangers to supervise it and act as our custodians, but we want it left inviolate. It is the only way.

You cannot - in spite of what the Minister says - carry out selective logging in a rain forest such as this without destroying it.

The need is urgent. It is later than we realise. Already they have driven up the ridge and reached my grove of Antarctic Beeches. Would you guess what they did then? Well, they drove the road right through the copse that had been standing there for a couple of millenia, cut the great old trees down and pushed them to the side of the road.

You know the attitude, or will readily recognise it: "Get this heap away, Charlie, before the bloody conservationists start screaming."

PHOTOGRAPHS

But, on Friday afternoon Charlie likes to get back to town and have a few beers with the boys, the logs remained there over the weekend. The conservationists did see them. moreover they photographed them, and it is my secret hope that these will severely embarrass some bureaucrats in office in the near future.

Those Antarctic Beeches have gone - and gone forever. Neither we, nor our children or great grandchildren will ever see that copse regenerated. My growing fear is that they are still cutting them, and how pitifully few there must be left to cut.

Do we want false beeches or false economy? Is this "selective" logging not false reasoning? I believe it is false morality.

Could not we Australians, before it is too late, learn that there are some values greater than the dollar? The Americans, having fouled up their own country, have now turned to fouling up every other country they can get their ham-fisted claws upon. But millions of Americans are now discovering the utter folly of their ways, and thousands are seeking to come to our land, even as a refuge from their own.

"KILLERS"

We need to learn the lessons they failed to learn. We had better do it quickly and it won't be easy. We have a shockingly bad record ourselves as killers and destroyers.

We wiped out an entire race of people (the Tasmanian Aborigines) in a space of 75 years; we have wiped out the great seal colonies; we have brought the great whales to the verge of extinction; we have wiped out the Tasmanian wolf, the Kangaroo Island emu, and numerous mainland species of birds and furred animals are on the doubtful list. The cedar forests have gone and now we are, I think, down to our last few (hundred?) Antarctic Beech trees, and we are allowing them to be cut.

The Border Range Preservation Society people deserve our energetic support. Since Mr. Whitlam doesn't like the idea of conferring Royal knighthood honours, since he prefers some type of purely Australian distinction, I suggest we back him up.

Why not begin by conferring Australian distinctive community service medals upon each and every member of the Border Range Preservation Society, "for meritorious and selfless service to the Australian people."

Glen Hall

SOME NOTES ON EPIPOGIUM ROSEUM (D.Don.) Lindl.

Felicity & Keith Holmes

Flowering plants of Epipogium roseum (D.Don.) Lindl., were observed by the authors during November and December 1972 in the Boonanghi State Forest, 21 km. west of Kempsey, on the mid-North Coast of N.S.W. This is probably near the southern limit for this widespread tropical species which has been recorded from northern N.S.W. Queensland, New Guinea, New Hebrides, Indonesia, Phillipine Is., Japan, Thailand, India, Ceylon and in Angola and the Cameroon Is. in West Africa.

A number of scattered colonies of the orchids were growing in very shady conditions in a wet sclerophyll forest. Six to twelve closely grouped plants were in each colony - the largest area covered by a colony being approximately 1 m. square. There had been above average rainfall during the preceding three months.

Trees growing in the immediate vicinity were: Casuarina torulosa (Forest Oak), Syncarpia glomulifera (Turpentine), Tristania conferta (Brush Box), a Stenocarpus sp. and Myrtus spp. The ground cover consisted mainly of several species of ferns and a native ginger, growing in a thick layer of moist leaf mould. The only other terrestrial orchids found in the area at that time were Chiloglottis reflexa (Labill.) Druce, and Calanthe triplicata (Willem.)

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Some Notes On Epipogium roseum (D.Don.) Lindl. cont.

Epipogium roseum (D.Don.) Lindl., is a terrestrial saprophyte. In the Boonanghi specimens there was a complete lack of pigment in the whole plant, with the exception of the labellum which is dotted with 8 - 12 irregular reddish-purple spots. The flowers had a slightly unpleasant glue-like smell.

Illustrations of this species may be seen in Dockrill (1969, p.137), and Nicholls (1969, p. 349).

Van Leeuwen (1937, p.57) recorded the remarkable fact that there is no mycorrhizal fungus in the cells of the starch-filled tuber and of there being a younger stage consisting of a thick coralloid rhizome with thick, spreading off-shoots. The rhizome contains cells with mycorrhizal fungus. The off-shoots swell at their tips and form the tubers, but at flowering time the tubers are completely detached.

Apparently each colony of closely grouped flowering plants is the end result of a single germinated seed, but nothing is known about the germination.

The growth of the above-ground flowering portion of the plant is unusual, and rapid. Observations and measurements of one plant were as follows:

1st. day - The irregular oval tuber measuring 3.5 cm. X 2 cm. was sitting loosely under the leaf mould, just below ground level. The lower portion of the flowering stem, the peduncle, appeared above ground level. The upper section, the rhachis, remained under the soil surface reminiscent of a french bean plant when it first appears above the soil.

3rd. day - Peduncle erect, 10 cm. in height. Rhachis 4 cm. and decurved. 17 buds were crowded into this space and the lower flowers were beginning to open. The plant at this stage resembl an inverted fish hook.

6th. day - Whole plant erect, peduncle 10 cm., rhachis 22 cm. A total height of 32 cm. The peduncle and rhachis were thin-walled hollow tubes. This economical type of construction enables the supply of starch in the tuber to be used to maximum advantage. The 17 flowers were all open and the ovaries on some were beginning to swell. This species is very efficiently self-pollinating, i.e. autogamous. Prior to fertlisation of the flower, the pedicel was at right angles to the rhachis, but, after fertlilisation was effected, the pedicels became lax and the ovaries hung vertically downwards. This is one of the relatively few terrestrial orchids with pendulous seed capsules.

11th. day - The mature ovaries on all flowers had dehisced and creamy coloured clouds of seeds floated out when the plant was disturbed. The seeds are very small, being built up of only 8 cells. They are also extremely light in weight. Van Leeuwin (1936, p.63) stated that at the Buitenzorg Botanic Gardens, the seeds of this species were found to weigh 0.0000001 gm., or 10,000,000 seeds to 1 gm. They tend to float in the air and Van Leeuwen claimed that, theoretically, there is no distance on earth which cannot be bridged by the seeds.

13th. day - The ovaries were empty and the whole plant began to collapse and die. The tuber was shrivelled and empty.

References:

Dockrill, A.W. (1969) Australian Indigenous Orchids, Vol.1. The Society for Growing Australian Plants.
Nicholls, W.H. (1969) Orchids of Australia. Edited by D.L. Jones and T.B. Muir. Thomas Nelson (Aust.) Ltd.
Van Leeuwen, W.M.D. (1937) The Biology of Epipogium roseum (D.Don.) Lindl. Blumea, Supplement 1. (J.J. Smith Jubilee volume) - 29,Vl. pp.57-65.

F.M. & W.B.K. Holmes,"Hampden Hall", Kempsey. N.S.W., 2440.

ROYAL BOTANIC GARDENS AND NATIONAL HERBARIUM REPORTS, 1968 & 1969.

The average reader might be forgiven if he were to pass over these reports as being dry, uninteresting financial reports of the activities of the Gardens & Herbarium. In fact they contain a wealth of information of vital interest to all native orchid lovers and field naturalists. For your interest I have listed below, some of the more relevant points of the reports concerning native orchids.

1968 Report. 'Plants Newly Recorded For New South Wales' - Acianthus amplexicaulis, near Byron Bay. It is a small ground orchid, otherwise known only from Queensland.

'Rare Species and Extensions of Range' - Corybas dilatatus near Humula. This small ground orchid has been reported to occur near Batlow but there was no previous authentic specimen in the National Herbarium.

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Royal Botanic Gardens and National Herbarium Reports, 1968 & 1969. cont.

1968 Report cont. 'Rare Species and Extensions of Range' - Diuris pedunculata, near Tocumwal. Last collected on the western plains from near Hay in 1917.
Epipogium roseum, Mt. Warning, near Murwillumbah. The third record for New South Wales of this saprophytic orchid, and the first since 1917.
1969 Report - 'Plants Newly Recorded for New South Wales' - Pterostylis acuminata var. ingens; Carabost Creek near Wagga; known from Victoria. 'Rare Species and Extensions of Range' - Prasophyllum wilsoniense, Mt. Kerry, NE of Rylstone; northward extension from Mt. Wilson, Blue Mountains. Pterostylis longicurva, Braidwood; previously known only from the northern half of New South Wales.
'Significant Collections from Other States' - Pterostylis rufa var. aciculiformis, near Toowoomba, Queensland; first record for that State.

SAVING THE ANTARCTIC BEECH (Nothofagus moorei).

If you were shocked by the revelations in Glen Hall's article on pp.66-69 and, more importantly, want to do something about it, contact the Hon. Secretary of the Border Ranges Preservation Society, J.G. Brown, 3 Morrison Avenue, Mullumbimby, N.S.W. 2482. He can suggest how best to express your anger in official quarters. When writing, don't forget that preservation causes can always use money to assist the cause. What about it members & Group Committees ?

SOME OBSERVATIONS OF NATIVE ORCHIDS OF THE DORRIGO.

Alan Claydon

What can surpass the thrill of a journey into unknown territory in search of our native gems?
Dorrigo, situated on a plateau, jutting out from the Great Dividing Range, has much to offer the orchid enthusiast.
Within a few miles of the town, the beautiful Dendrobium falcorostrum grows, almost exclusively on the Negrohead or Antarctic Beech (Nothofagus moorei).
Great masses of plants can be seen growing in full sunlight in the tops of those seemingly dead trees. It surely must be one of the hardiest of our native orchids, as it revels in intense heat in summer, severe frosts in winter and bleak, cutting westerly winds.
After severe wind storms, I have observed quantities of plants on the ground, having been dislodged from their hosts. Usually the wallabies are first on the scene, to devour the green leaves.
The exquisite perfume when in flower is something to be remembered.
Dendrobium speciosum displays itself in vivid splashes of colour on exposed rocks, together with Dendrobium kingianum.
The brush contains a variety of orchids including Sarcochilus falcatus and S. hillii
Dendrobium teretifolium var. fairfaxii hangs in long slender strands, together with Dendrobium pugioniforme, while Dendrobium beckleri is usually found lower down within easy reach.
Growing in masses on the trunks of the brush box is the dainty Dendrobium aemulum, some of the finest specimens I have seen.
The brush turkey, a very shy bird, is quite often encountered in this territory.
Sarcochilus ceciliae, a lover of sun baked cliffs, can be found quite easily during the flowering season, but when not in flower is not easy to detect. I have found it growing on bare rocks, its roots exposed, with the summer temperature well in excess of the century mark (100°F = 37.8°c), which makes one wonder how it survives. When in flower I have also found it growing amongst clumps of grass, with not a leaf visible, only the flower spikes protruding through the grass.
Some of the finest specimens I have found were growing in this manner.
In association with Sarcochilus ceciliae can be found Bulbophyllum elisae, Liparis coelogynoides and an odd plant of Dendrobium beckleri.
On small trees, belonging to the oak family, which grow around the cliffs, can be found Dendrobium cucumerinum and D. linguiforme. Among these trees one finds the favourite haunt of the stinging nettles.
Descending into the ravines one comes across large masses of Dendrobium kingianum, a tall growing form which does not flower as profusely as the local type, but throws quite a lot of aerial growths.

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Some Observations Of Native Orchids Of The Dorrigo. cont.

Liparis reflexa, in large colonies makes one quite aware of its presence, with its nauseating odour.
Following on down the stream, scrambling over slippery rocks, and detouring around waterfalls, you become aware of the leeches which thrive in this environment.
Large colonies of *Sarcochilus fitzgeraldii* can be observed growing on the moist rocks, sometimes being continually sprayed by the cascading water. The beautiful sight of their sickle shaped leaves, and racemes of large white flowers, blotched with red is a sight which has to be seen to be believed.
Calanthe triplicata can be found in large quantities growing in the bush leaf mould, while the branches of small trees overhanging the streams invariably bear *Plectorrhiza tridentata* and *Sarcochilus olivaceus*.
Beautiful specimens of tree ferns, birds nest ferns, elkhorns, staghorns, maiden hair ferns of various types, and a variety of mosses, make it a photographic paradise.
The pest of the bush is the stinging tree with its furry leaves, and no matter how one tries to avoid coming in contact with it, the stinging tree usually wins.
Scrub ticks are numerous and seem to take a liking to me, quite often not making their presence felt until the following day.
In conclusion I would say, for those who desire a tour free from the troubles of the world, and like the spirit of adventure, I would strongly recommend a trip to the Dorrigo area.

Alan Claydon, 101 Teralba Road, Adamstown, N.S.W, 2289.

AN APPEAL FOR ASSISTANCE.

David L. Jones

I am in the process of reviewing the Eastern members of the genus *Prasophyllum* and need specimens, especially of the 'pygmies'. Thes should preferably be fresh or pickled, as the group is very difficult to deal with from pressed material. I would greatly appreciate the assistance of any members.

David L. Jones, 2 Kathleen Close, Bayswater, Victoria. 3153.

THIRD AUSTRALIAN ORCHID CONFERENCE - ADELAIDE.

The Third Australian Orchid Conference, sponsored by the Australian Orchid Council in conjunction with the Orchid Club of South Australia will be held from the 23rd. - 29th. September 1973. Conference headquarters will be the Hotel Australia, O'Connell Street, North Adelaide. I understand that a full week of entertainment is planned, which will include the spring Orchid Festival of South Australia and Conference Lectures. Other social activities are planned to make this a conference to be long remembered.
Should you wish further particulars, write to the Conference Secretary, Mr. C.K. Yates, 452 Seaview Road, Henley Beach, South Australia, 5022.

A.N.O.S. Victorian Group News Bulletin.

This article appeared in the A.N.O.S. Victorian Group Bulletin, March 1973, and is really so interesting that I have reprinted for the benefit of all members.

PESTS OF PLANTS.

Harry Wilson

There are more than 50,000 different kinds of native insects in Australia, and a large number of native mites. There are also some hundreds, possibly thousands, of different kinds of introduced insects and mites. Of all these living forms, about one third feed on living plants, about one third on decaying plant or animal remains, and the remainder are parasites and predators. Of the thousands of insects and mites which feed on plants, only a few hundred species are significant pests of plants in Australia. The number of pests in Victoria of any importance is probably less than two hundred.
With rare exceptions pests cause their damage, or interfere with the health of plants, by feeding. Some spiders web leaves of plants together without feeding, and on rare occasions they may cause some damage.
Pests can be divided conveniently into two groups depending on their feeding habits. Some which are called chewing pests remove portions of the plants, grind them up and swallow them in the same manner as humans, horses, or cows do.

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A DECADE OF ORCHIDS

ANNUAL ELECTIONS - 1973-'74.

There being only sufficient nominations to fill the requisite positions on Council for the ensueing year it was not necessary for the Election Returning Officers to forward ballot papers to all financial members of The Society.

A.N.O.S. JUDGING STANDARDS.

The next issue of The Orchadian will feature our Judging Standards for native orchids and native orchid hybrids. These standards have been achieved after many years work by a very dedicated A.N.O.S. Sub-Committee, consisting of Phil Spence, Bob Lowe, Lloyd Bradford and Wal Upton (Chairman). This Sub-Committee originally formulated a standard which was circulated to interested parties for comment. These individual comments were then appraised and either rejected or incorporated into the final draft, approved by your Council and presented to the Orchid Society of N.S.W. for incorporation in the agenda of the Australian Orchid Council meeting in Adelaide in September 1973.
The results of these endeavours will be told in the next issue, as mentioned previously.
We hope to have the next issue out almost immediately!
Material for publication is always most welcome, remember we can only publish if you assist by contributing!

Sydney based members of A.N.O.S. were very successful at the Festival.
Sydney Group took a very well deserved second place to the Berowra Orchid Society in their display of native orchids. In doing so they displaced the North Shore Orchid Society who had won first place for the previous ten years straight. Well done!
Phil Spence and Murray Corrigan backed by stalwart assistants mounted an 80 square feet display of orchids to gain a First, the David Sander Bowl, and 2 silver medals.

OUR 10th. ANNIVERSARY.

Yes, our Society is now ten years old. Young perhaps, in terms of years when compared with some of the long established Societies and Institutions with similar interests but a Society which has been very active in many fields. One has only to read back through the 574 pages of The Orchadian to appreciate the efforts of both Councillors and members. I feel that it is appropriate that we republish the "Objects" of our Society as incorporated in our Constitution and its ammendments and published in our first issue of August 1963.

OBJECTS

1. To promote the culture and propagation of the native orchids of Australasia;
2. To assist in the preservation of the native orchids of Australasia in their native habitat and to discourage the wanton destruction of same;
3. To promote the scientific and cultural knowledge of the native orchids of Australasia;
4. To publish, edit and review literature and all writings, that are approved by the Society, appertaining to the recordings, propagating, culture and science of the native orchids of Australasia;
5. To print and publish pamphlets and periodicals that the Society may consider desirable for the promotion and furtherance of any of its objects;
6. To establish and maintain standards for the competition and award judging of the native orchids of Australasia;
7. To establish and maintain awards for the native orchids of Australasia, with the co-operation of the appropriate authorities;
8. To engage in any activity that would further the wellbeing and increase the knowledge of the native orchids of Australasia;
9. To extend the membership of the Society by creating a public interest in the Societies activities and proceedings.

A PRESIDENTIAL MESSAGE.

R.M. Lowe

This year, 1973, marks the tenth anniversary of the formation of the Australasian Native Orchid Society and it has been an honour to occupy the position of President as we pass that milestone.

From the beginning, the Society has grown to be an authoritative voice in the orchid world, and has captured the attention and patronage of both the scientific mind and the hobbyist alike, being of equal attraction to both in the furtherance of its aims.

I would like to pay tribute here, to those past Presidents and Councillors for their wisdom and devotion, together with the energetic members of our Groups, without whose collective support our Society could not function.

While I hesitate to be specific about individual members, it would be wrong of me not to draw attention to our hard working Editor who has had to do battle with the "communications barrier" since the inception of our Society. Let us show our appreciation and make his task easier, by submitting subject matter for publication - the type of article you think others would like, and I am sure it will be gratefully received.

During the past year, we were saddened to note the passing of one of our most progressive hybridists in the person of Ira Butler. Many private orchid collections have been enriched by the sale of his plants which had been purchased by your Society. We trust they will remain a living memorial to his work. I would like to add a word of thanks to Murray Corrigan and his associates, without whose painstaking work in preparing lists and storing plants, this purchase would not have been possible.

It is my sincere hope that we may all approach the next decade with renewed imagination, constructive criticism and vigour, as those before us. May the Society prosper by our efforts. Remember it is your Society too, and we must keep it alive and progressive by our thoughts and actions.

FOUNDATION COUNCILLORS.

Of the 9 Foundation Councillors of the Society, two have served the Society for the full term - Eric Gordon and Murray Corrigan. Wal Upton, Stephen Clemesha and the irrepressible Bill Murdoch are all very active in A.N.O.S. activities and have rendered stalwart service.

OUR TENTH BIRTHDAY.

W.H. Murdoch

With ten years of activity drawing to a close, it is not inappropriate that we mark our progress. Possibly there were some areas where we have erred, both on the score of things done, and of things left undone, but the overall picture is one of deep satisfaction.

For some years prior to our formation we suffered an almost complete absence of any publication offering comprehensive coverage of our native orchids. At best, what was published was fragmentary and appeared to be more in the nature of a space filler, very often of dubious validity and of scant value.

To remedy this position was possibly the strongest argument in favour of the formation of our Society. A further reason, possibly not so well recognised then, as it is now, was the urgency for conservation. Another prime reason was the growing demand for something tangible in the matter of standards for judging our native orchids.

A large number of native orchid growers throughout the Commonwealth were circulated, asking their opinion as to the need, as they saw it, for a native orchid society. The upshot of this was the formation of a Committee to prepare the general plan and subsequently the inauguration of The Australasian Native Orchid Society.

Whilst I feel it is not necessary to identify all who took part in the preliminary activities, one at least must be mentioned. W.T. 'Wal' Upton, as our first Hon. Secretary, must be accorded the honour for the success of the initial effort.

A quarterly publication was decided upon, and, on a suggestion made by Eric Gordon, was named The Orchadian. How he arrived at it is anyones guess, but alter two letters and we recall Longfellow's 'Evangeline - A Tale Of Acadie' which commences "This is the forest primeval." Well anyhow, pardon my lapse, I may be mistaken! The title has been accepted as appropriate and continues to be a very valued periodical ever since, in fact no members library is complete without the complete bound volumes of The Orchadian. Botanical accuracy is the first care of our Editor and committee.

Our first opportunity to undertake a publication other than our own, came with Murray Corrigans successful negotiations with A.W. Dockrill to publish his "Sarcanthinae". The work was "read" by Eric Gordon and Murray. To the uninitiated reader, this could be passed over as an unimportant routine, but there is very much more in it than appears on the surface. To usefully "read" a work of high qualoty, the reader must be as equally well informed on the subject as the author, have unlimited time to spare, as it is his job to check with the botanical archives and herbaria. That our members acquitted themselves in the manner that was achieved deserves congratulations.

Our first effort was entirely successful and was the signal, if what I believe is correct, for the other numerous publications which came on the market. However, be that as it may, we now have quite a number of books available, all of value, with some possibly of more value than others.

Closely following the formation of The Australasian Native Orchid Society, several "Groups" were formed in locations where numbers appeared sufficient. One in Melbourne, two in Sydney, one in Newcastle and each in Toowoomba and Townsville. A few smaller "Groups" were started, but found a continuing difficulty in finding officers. This may be a matter of further attention. One very substantial Native Orchid Society is the Native Orchid Society of Queensland. This body is extremely energetic and its Bulletin is adding to our botanical records.

Several "Groups" publish bulletins that are very informative and of great interest, they can be had, in most cases, by distant subscribers, for a nominal fee.

All "Groups" have identified themselves in some way or another with local problems of conservation. Our Victorian friends find enough in hand in replanting terrestrials. Sydney people have projects centred on the now famous "Stony Range" Flora Reserve, at Dee Why.

Newcastle "Group" has induced the City Council to build them a native orchid house in our largest reserve, known as "Blackbutt" which is of some 350 odd acres. This house is now filled with native orchids and is in its own way proving that all our plans may not be as perfect as we would like. In other words (my own words incidentally) there are dozens of our native orchids we have not learned to grow successfully.

However, we have had considerable success in salvaging, if I may use the word, quite an amount of material from forest areas marked down for clearing From private property on the Wattagan Mountains, Dicksonia antarctica for "Blackbutt" and our Royal Botanic Gardens together with Dendrobium falcorostrum and assorted Dendrobiums. From our State forests came Dicksonia antarctica (where in process of reafforestation) by permission of the Forestry Commission. I might mention that many of the Dicksonia antarctica are growing within the Royal Botanic

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RECENT NAME CHANGES AND NEW NAMES IN AUSTRALIAN ORCHIDS.

D.F. Blaxell
Royal Botanic Gardens
& National Herbarium

Although we all deplore and are often annoyed by changes in names familiar to us, such changes usually depend on good reasons. The recent batch of name changes follows studies by botanists into the relationships and relevant positions of certain species. Although many of these decisions are partly subjective, depending on evaluation by the botanist concerned, they result from detailed studies of particular groups, as well as increased knowledge in general. New names and changes of name, published in The Orchadian, have not been included here.
For discussion of, and reasons for, the changes, it is suggested that the paper concerned be consulted. These are listed at the end of this article. Particular note should be taken of the introduction to A.S. George's Checklist.

Old name	New name	Author of name change
Spiculaea irritabilis (F. Muell.) Schltr.	Arthrochilus irritabilis F. Muell.	D.F. Blaxell
Spiculaea huntiana (F. Muell.) Schltr.	Arthrochilus huntianus (F. Muell.) Blaxell	D.F. Blaxell
Caleana minor R. Br.	Paracaleana minor (R. Br.) Blaxell	D.F. Blaxell
Caleana nigrita Lindl.	Paracaleana nigrita (Lindl.) Blaxell	D.F. Blaxell
Caleana sullivanii (F. Muell) Pescott	Paracaleana sullivanii (F. Muell.) Blaxell	D.F. Blaxell
Caleana nublingii Nicholls	Paracaleana minor (R. Br.) Blaxell	D.F. Blaxell
Acianthus huegelii (Endl.) Nicholls & Goadby	Acianthus reniformis (R. Br. Schltr. var. huegelii (Endl.) A.S. George	A.S. George
Caladenia dorrienii Domin.	Caladenia filamentosa R. Br. var. dorrienii (Domin.) A.S. George	A.S. George
Caladenia magniclavata Nicholls	Caladenia longiclavata E. Coleman var. magniclavata (Nich.) A.S. George	A.S. George
Caladenia dilatata R. Br. var. rhomboidiformis E. Coleman	Caladenia longiclavata var. rhomboidiformis (E. Coleman) A.S. George	A.S. George
Caladenia ochreata Lindl.	Caladenia marginata Lindl.	A.S. George
Caladenia latifolia R. Br. var. angustifolia Benth.	Caladenia marginata Lindl.	A.S. George
Caladenia paniculata R.D. FitzG.	Caladenia marginata Lindl.	A.S. George
Caladenia purdieana C. Andrews	Caladenia marginata Lindl.	A.S. George
Caladenia latifolia R. Br. var. glandula Ewart & Wood	Caladenia marginata Lindl.	A.S. George
Caladenia macrophylla R. Br.	Caladenia menziesii R. Br.	A.S. George
Leptoceras oblonga Lindl.	Caladenia menziesii R. Br.	A.S. George
Caladenia unita R.D. FitzG.	Caladenia nana Endl.	A.S. George
Caladenia bicolor R.S. Rogers	Caladenia radialis R.S. Rogers	A.S. George
Caladenia preissii Endl.	Caladenia reptans Lind.	A.S. George
Diuris pauciflora R. Br.	Diuris emarginata R. Br. var. pauciflora (R. Br.) A.S. George	A.S. George
Diuris carinata Lindl.	Diuris laxiflora Lindl.	A.S. George
Diuris filifolia Lindl.	Diuris setacea R. Br.	A.S. George
Drakaea fitzgeraldii Schltr.	Diuris elastica Lindl.	A.S. George
Eriochilus tenuis Lindl.	Eriochilus scaber Lindl.	A.S. George
Leptoceras fimbriata Lindl.	Leporella fimbriata (Lindl.) A.S. George	A.S. George
Microtis gymnadenioides Diels.	Microtis pulchella R. Br.	A.S. George
Prasophyllum attenuatum R.D. FitzG.	Prasophyllum ovale Lindl. var. ovale	A.S. George
Prasophyllum australe R. Br. var. sargentii W.H. Nicholls	Prasophyllum sargentii (W.H. Nicholls) A.S. George	A.S. George
Prasophyllum ellipticum R.S. Rogers	Prasophyllum brownii Reichb.f.	A.S. George
Prasophyllum cucullatum Reichb.f.	Prasophyllum gibbosum R. Br.	A.S. George
Prasophyllum fuscoviride Reader	Prasophyllum nigricans R. Br.	A.S. George
Prasophyllum gracile Lindl.	Prasophyllum macrostachyum R. Br.	A.S. George
Prasophyllum horburyanum Rupp	Prasophyllum nigricans R. Br.	A.S. George

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Recent Name Changes and New Names In Australian Orchids. cont.

Old name	New name	Author of name change
Prasophyllum macrotys Lindl.	Prasophyllum elatum R. Br.	A.S. George
Prasophyllum muelleri Andrews	Prasophyllum drummondii Reichb.f.	A.S. George
Prasophyllum paludosum W.H. Nich.	Prasophyllum drummondii Reichb.f.	A.S. George
Prasophyllum plumaeforme FitzG.	Prasophyllum ovale Lindl. var. triglochin Reichb.f.	A.S. George
Pterostylis constricta Sargent	Pterostylis scabra Lindl. var. scabra	A.S. George
Pterostylis hamiltonii W.H. Nich.	Pterostylis scabra Lindl. var. robusta (R.S. Rogers) A.S. George	A.S. George A.S. George
Pterostylis robusta R.S. Rogers	Pterostylis scabra Lindl. var. robusta (R.S. Rogers) A.S. George	A.S. George
Thelymitra azurea R.S. Rogers	Thelymitra canaliculata R. Br.	A.S. George
Thelymitra benthamiana Reichb.f.	Thelymitra fuscolutea R. Br.	A.S. George
Theymitra fasciculata FitzG.	Thelymitra cornicina Reichb.f.	A.S. George
Thelymitra dedmanae R.S. Rogers	Thelymitra fuscolutea R. Br. var. stellata (Lindl.) A.S. George	A.S. George
Robiquetia rectifolia Dockrill	Saccolabiopsis rectifolia (Dockrill) Garay	L.A. Garay
Saccolabium subluteum Rupp	Trachoma subluteum (Rupp) Garay	L.A. Garay
Parasarcochilus spathulatus (R.S. Rogers) Dockrill	Pteroceras spathulatus (Rogers) Garay	L.A. Garay
Parasarcochilus hirticalcar Dockrill	Pteroceras hirticalcar (Dockrill) Garay	L.A. Garay
Parasarcochilus weinthalii (F.M. Bail.) Dockrill	Sarcochilus weinthalii F.M. Bail	L.A. Garay
Camarotis keffordii (F.M. Bail.) J.J. Sm.	Micropera fasciculata (Lindl.) Garay	L.A. Garay

New name	Author	State
Caladenia corynephora	A.S. George	W.A.
Caladenia crebra	A.S. George	W.A.
Caladenia graminifolia	A.S. George	W.A.
Pterostylis angustata	A.S. George	W.A.
Pterostylis byrnesii	D.F. Blaxell	N.T.
Leporella	A.S. George	W.A.,S.A., Vic.
Paracaleana	D.F. Blaxell	W.A.; S.A., Vic., N.S.W., QLD., Tas. New Zealand

References.

Blaxell, D.F. - "Arthrochilus F. Muell. and related genera (Orchidaceae) in Australasia". Contributions from the N.S.W. National Herbarium. 1972.

Garay, L.A. - "On the Systematics of the Monopodial Orchids I"Botanical Museum Leaflets, Harvard University. 1972.

George, A.S. - "A Checklist of the Orchidaceae of Western Australia". Nuytsia. 1971.

D.F. Blaxell, Royal Botanic Gardens and National Herbarium.

AN APPEAL FOR PRASOPHYLLUM MATERIAL.

Don Blaxell B.Sc. of the National Herbarium of New South Wales is particularly interested in obtaining whole plants (including tubers) of any Australian Prasophyllum species. Don is also particularly interested in information regarding their actual flowering period and of those in bud and available for his collection in situ. Plants are wanted for anatomical and chromosome study. Please contact Don at the National Herbarium of N.S.W., Royal Botanic Gardens, Sydney. N.S.W.

Our Tenth Birthday. cont.

Gardens, within close proximity to our Opera House.

As mentioned earlier, the question of "standards" is, with many of our growers, a matter of deep concern. Undoubtedly it may take some time to apply, even after it is approved by the Australian Orchid Council, but it is generally agreed that the submission prepared by our Society's Judging Sub-Committee under the Chairmanship of Wal Upton are very acceptable and will go far to clear the air in this area.

Finally a few words anent our Council. Our Editor, Murray Corrigan is doing his job with as much zeal as he has evinced since our foundation. His output speaks for him. Eric Gordon referred to by me, very many moons ago, as the power behind the throne. He still is, in my opinion. Eric Marygold, now Hon. Secretary and one time Treasurer, is still with us.

Of the others, I believe I have accounted for the originals, so I won't attempt to name more than one. Quite in keeping with the current trend of thinking (but certainly not really trendy) is our concession to women's Liberation, Margaret Spence is worth her weight in gold. Can I say more!

Bill Murdoch

NEW GUINEA'S DENDROBIUM LOBBII.

Nev Howcroft

Dendrobium lobbii T & B., Nat. Tijdschr. Ned.-Indie 5(1853)491; Hk.f., Fl. Brit. India 5 (1890)728; Krzl., Pflanzenreich Heft 45(1910); Holtt., Fl. Malaya 1 (1957) 342; Walters, Orchadia 2(1968)130-1.
Dendrobium calcaratum Ldl.; Bot. Reg. 26(1840)89, No.219; (non A. Rich 1832).
Dendrobium conostalix Reichb.f. Dalp., Ann. Bot. Syst. 6(1861)292.
Callista conostalix (Reichb.f.) Kuntze, Rev. Gen. Pl. 2(1891)654.
Callista lobbii (T & B) Kuntze, ibid p.655.

Terrestrial, 25 - 100+ cm. tall. Stems slender, wiry, small pseudobulbs at base, leafy throughout on young plants, stems often branched in older plants, internodes 1.6 - 2.7 cm., diameter 1.5 - 2.5 mm. Leaves with long sheathing bases 2 - 4 X 0.4 - 0.5 cm. narrowly triangular, unequally bilobed at apex, thin, upright, partly apressed to stem, leaf sheaths near apex of stem covered with brown-black hair, mostly absent on older leaves.
Inflorescences many, depending on plant size, occurring near the top of leaf sheath; peduncles 1.5 mm. long, bearing 1 - 2 flowers, pedicels 7 mm. long. Flowers facing downwards with ventral portion of labellum facing out, 10 - 15 mm. long, 15 - 17 mm. wide; sepals and petals green to cream-yellow depending on age, orange veins; labellum white; mentum ± equal length to dorsal sepal; sepals and petals spreading to moderately spreading, depending on age. Dorsal sepal 7.5 X 3.0 - 3.5 mm. ovate, acute. Lateral sepals including mentum 12 X 2.5 - 3.0 mm. long, moderately acute. Petals 5 - 6.5 X 1 - 1.6 mm., suboblong, acute. Labellum straight to slightly curved, 15 - 16 X 5 mm. trilobate, lateral lobes commencing ± middle of labellum, 2 X 2 mm. obliquely triangular; midlobe 6 - 7 X 4 - 5 mm., oblong-ovate, concave, laterally incurved near apex creating a distinct bilobed apex, 3 rounded keels extending longitudinally from the apex of the midlobe to approximately the middle of the labellum. Surface of lateral keels slightly granular.

This orchid was first located by a forestry school botanical collector and was handed to this author for a tentative identification.

Only one locality has been found to date. This is at 5,300' ASL in a grassland bog at the back of Bulolo. The area is surrounded by Castanopsis forest (figure 1), overlooking the Bulolo and Watut valleys.

Since its discovery the locality has been visited twice by this author and the area searched carefully to determine the size of the population of Dendrobium lobbii.

The orchids were first found growing on the edge of the bog (Figures 2 and 3). The larger plants were seen entwined among a tangle of Vaccinium and fern (near the left hand side of the person in Figure 3). The second visit revealed smaller plants (Figure 4) growing in parts of the bog's centre. Plants were not found on the far left hand side perimeter This meant that the orchids were almost totally exposed to sunlight from morning till afternoon.

The grassland bog itself, consists of deep peat and supports short grasses, pitcher plants (Nepenthes mirabilis) and a very attractive blue Burmannea species. In some parts Phaius tancarvilleae occur and most of these appear to be juvenile plants. The area appears to be wet throughout the year and is probably lightly flooded during the wet season.

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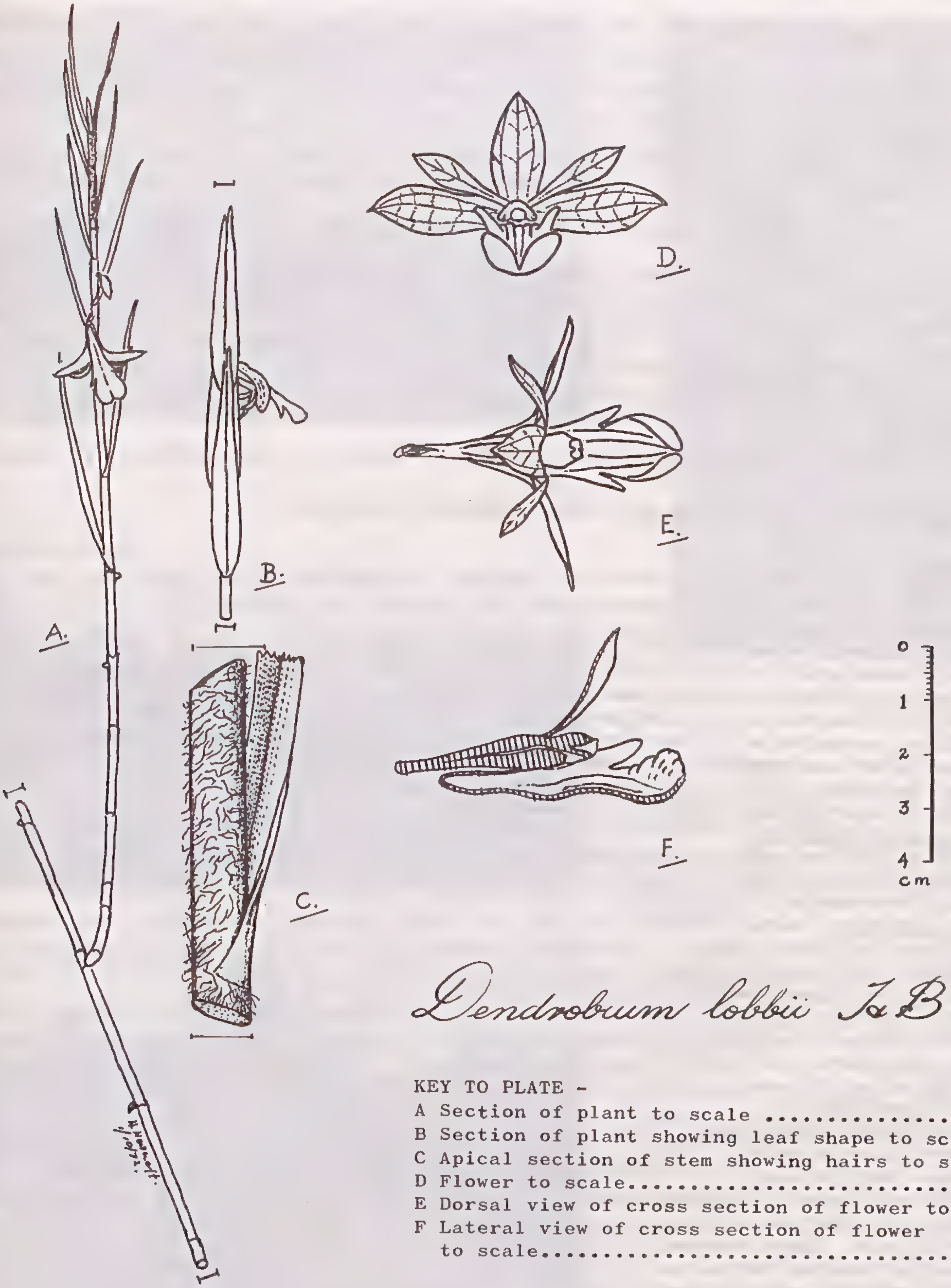
New Guinea's Dendrobium Lobbii. cont.



KEY TO PLATE -

A	Section of plant to scale	nat size
B	Section of plant showing leaf shape to scale	nat size
C	Apical section of stem showing hairs to scale	X5
D	Flower to scale	X3
E	Dorsal view of cross section of flower to scale.	X3
F	Lateral view of cross section of flower to scale	X3

New Guinea's Dendrobium lobbii. cont.

The New Guinea Dendrobium lobbii does not appear to be different to the Australian species although there is less evidence of the plants forming distinct tufts but rather they produce stems which creep several centimeters away from the parent stem before emerging from the grass cover. This habit may be induced by the covering grass and their surface stolons. Visits to this area were made six months apart, but on both occasions the plants were producing buds and flowers. The Forestry School Collector's visit was made at another period, apart from the above, but again reports flowering. From these observations and from those made of plants in cultivation it would seem that this species flowers throughout the year.

This orchid has been successfully raised here in potted peat and in open Vanda beds among moist, well rotted coconut fibre.

The description presented in this paper is only for the New Guinea species at Bulolo. To the author's knowledge it has not been previously described for this country.

Since the discovery in Australia, Dendrobium lobbii was expected to occur in New Guinea. It is interesting that, so far, only one area has been found in the Bulolo region. Diligent searching in similar locations may eventually reveal further colonies of this orchid which is difficult to locate among the dense grass occurring in the grassland swamps.

Acknowledgement: I would like to thank Dr. J. Davidson for reading the draft manuscript.

N.H.S. Howcroft, ¢ Forest Research Station, P.O. Box 134, Bulolo. Papua New Guinea.

A.N.O.S. Victorian Group News Bulletin. cont. from Vol. 4. No. 8.

Pests of Plants.

Harry Wilson

Other pests known as sucking pests, pierce or lacerate the surface of the plant and suck up the plant juices. Some insects can insert their thin needle-like mouth parts accurately into the food channels of plants, and can suck up the liquid food flowing through the plants.

Chewing Insects. Chewing insects can be considered under two headings. Under the first are those which are restricted in their activities due to various causes. In this group there are:-

a. Springtails: These are very small, wingless, hopping insects which live amongst herbage on the surface of the ground. The only plant pest of any importance in southern Australia among the Springtails is the lucern flea, a small, green, globular insect about one eighth of an inch long, which feeds during the winter on clover and other herbaceous plants. It is more common in open pasture in rural areas and could possibly cause damage to low ornamantal plants.

b. White Ants (Termites) : White ants live in the soil and in trees and some species could attack the tubers of orchids below ground. They will attack a range of ornamental plants below ground particularly in arid areas where small areas of garden are watered, or in newly cleared land in which ants are still present.

c. Stick Insects: These are fairly large, four inches or more, in length. Two species are known to cause damage to eucalypts in parts of the forests of south-eastern Australia by feeding on the foliage. They are essentially forest insects and are unlikely to cause damage to ornamental plants except eucalypts.

d. Flies : Certain species of very small flies have leaf-mining larvae or maggots which tunnel between the upper and lower surfaces of the leaves of a number of different kinds of plants, particularly plants belonging to the daisy family (Compositae). If the attack is severe enough plant vigour may be reduced and heavily infested leaves may die.

e. Crickets and Grasshoppers : These are fairly large, long-legged hopping and flying insects, many species of which feed on living plants. The field cricket is a black insect about an inch long which occurs in some years in large numbers in soils which crack heavily in summertime. It feeds vigorously on herbage after the autumn rains, and dies out in the winter. It causes damage to some ornamental plants, but this is rare. Three species of grasshopper occur in swarms and on occasions may cause damage to plants. The plague locust breeds in inland areas of eastern Australia, and in certain years produces large flying awarms which migrate long distances and may settle in large numbers causing damage to a wide variety of plants. The small plague grasshopper breeds in the low rainfall areas and forms small swarms which migrate short distances and can also cause damage although the swarms are fairly rare.

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New Guinea's Dendrobium lobbii. cont.

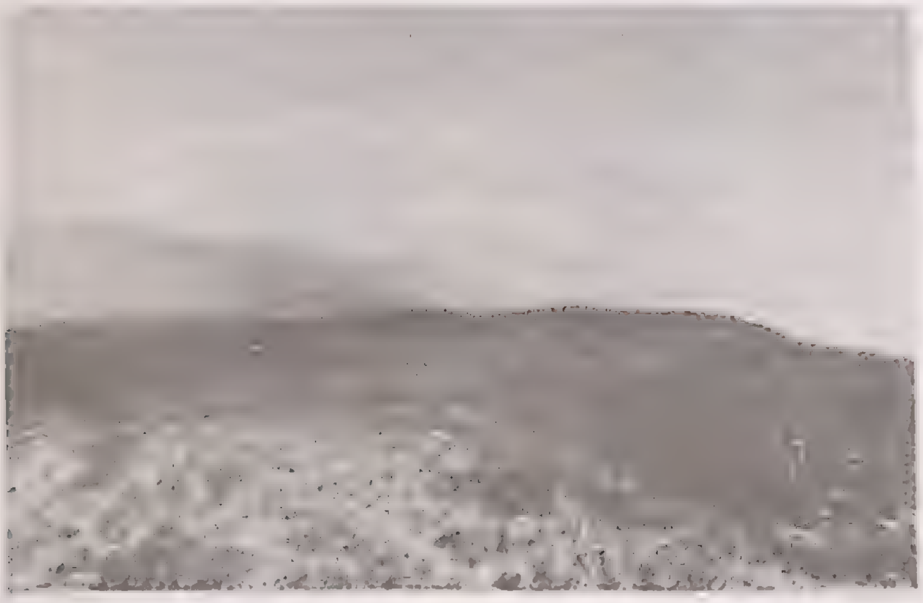

Figure 1.

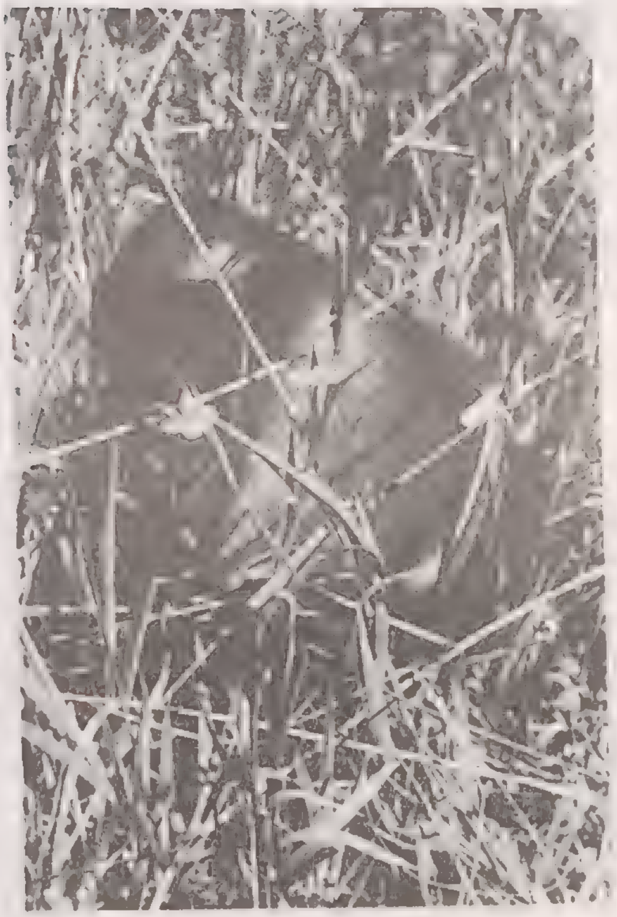

Figure 4.

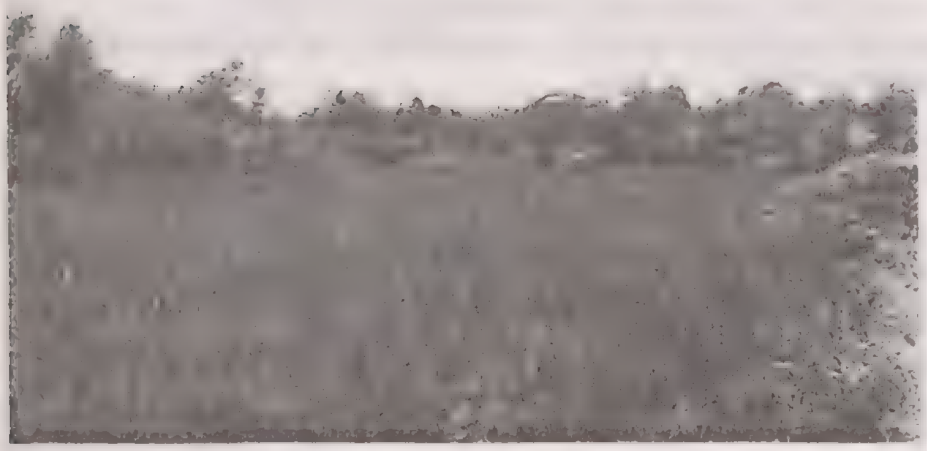

Figure 2.

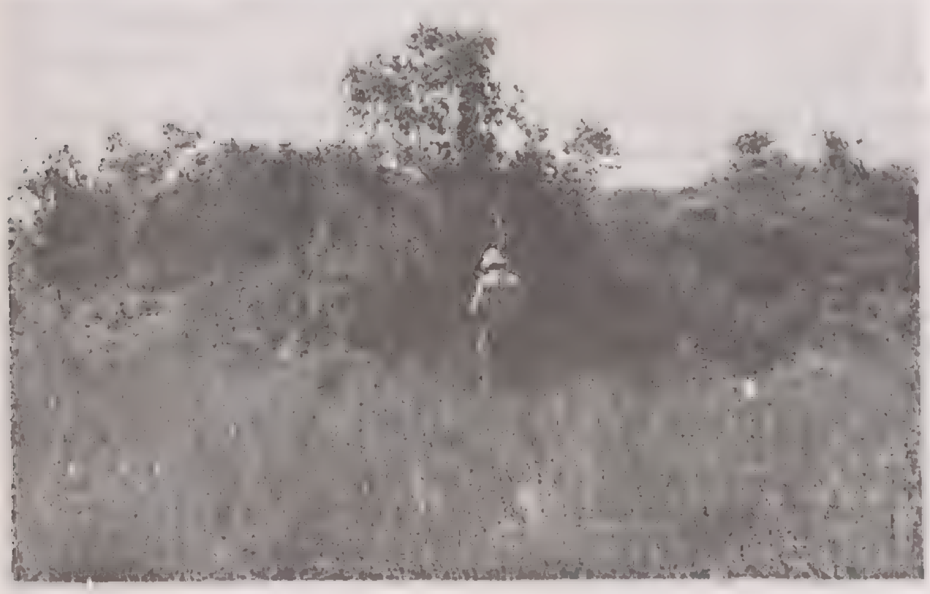

Figure 3.

Key to figures.

1. Grassland area in which Dendrobium lobbii is found.
2. The centre of the short grassland bog in which Dendrobium lobbii is found.
3. On the edge of the grassland bog. Dendrobium lobbii plants are entwined among the ferns, Vaccinium and grass, on the left hand side of the figure.
4. Bulolo's Dendrobium lobbii in flower. With camera case for size comparison.

THE SYDNEY ORCHIDS.

Jim Walker

Some time ago I was browsing through Rupp's "Orchids of New South Wales" and was struck by the number of orchids which used to grow in the Sydney metropolitan area, much of which is now under ashphalt, concrete or turf. I have listed below all 95 species listed in Rupp, as having been found in the area so that others may enjoy a nostaligic journey back into the "good old days" when Sydney was the bush.

It is surprising that the earliest recording is 1841 (Pterostylis concinna) which leads me to wonder just what the botanists were doing between 1788 and 1841. Perhaps they were too busy supervising convicts, farming at Farm Cove (next to the Sydney Opera House), or exploring rivers.

For the purpose of this exercise I have taken the metropolitan area as :-

to the East - the coast
to the North - Hawkesbury River
to the West - Nepean River
to the South - line from Nepean River to Sutherland, but including the Royal National Park.

An area roughly approximately 100 kilometers x 50 kilometers, this being slightly larger than the "declared" Metropolitan area.

For the benefit of the overseas reader, Sydney, area-wise, is one of the largest cities in the world although it only has 2,250,000 inhabitants. Apart from the Parramatta River basin, all the Sydney area is hilly, "Hawkesbury sandstone" country which must have made exploration difficult in the early days of the colony. The average rainfall is 52 inches per. annum, maximum temperature ranges from 0°C - 40°C, with an average daily temperature of about 22°C. Snow is virtually unknown, however, drought tends to be common, therefore, most species are fairly drought resistant.

This list is not meant to be a complete up-to-date guide, nor is it meant to imply that these orchids can still be found in the localities given. The fact that a suburb is not mentioned against a specific orchid only means that an official recording had not been made.

The order of the listings is:- generic name
specific epithet
date first recorded
suburb

Thelymitra ixioides (1887)	Artarmon, Lindfield, National Park, Thornleigh.
chasmogama (1934)	Killara.
longifolia (1900)	Centennial Park.
nuda (1889)	Botany Bay.
pauciflora (1899)	Botany Bay, Centennial Park.
carnea (1897)	Botany Bay, Hornsby, Lane Cove, Paddington, Willoughby
venosa (1894)	Bondi, Castle Cove, Pittwater.
Diuris punctata var. alba (1898)	Riverview.
punctata (1884)	Concord, Liverpool, Penshurst, Ryde, Richmond, St. Mary's.
maculata (1881)	East Hills, Hornsby, Kogarah, Pymble, Penshurst, Richmond, Wahroonga.
brevifolia (1928)	Manly Reservoir.
sulphurea (1898)	Richmond, Windsor.
aurea (1887)	Auburn, Berowra, Gore Hill, Hornsby, Lane Cove, Pt. Jackson, Ryde, Strathfield, Windsor.
Orthoceras strictum (1887)	Centennial Park, Chowder Bay, French's Forest, Manly, National Park, Parramatta, Pittwater, Willoughby.
Microtis unifolia (1903)	Hornsby, Hawkesbury River, Wahroonga.
parviflora (1887)	Botany, Centennial Park, La Perouse, Narrabeen, Pt. Jackson, Roseville, Wahroonga, Willoughby.
oblonga (1897)	Lane Cove, Pt. Jackson.
Prasophyllum flavum (1898)	Hornsby, Lane Cove.
elatum (1883)	French's Forest, Lane Cove, National Park, Manly, Pt. Jackson, Sutherland, Willoughby.
brevilabre (1899)	Hornsby, Ryde.
odoratum (1890)	Dangar Island, Loftus, Pt. Jackson.
patens (1894)	National Park.
striatum (1890)	Collaroy, Kuring-gai Chase, Lane Cove, Pt. Hacking, Pt. Jackson, St. Ives.

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The Sydney Orchids. cont.

Prasophyllum	*nichollsianum* (1929)	National Park.
	trifidum (1928)	Castle Cove, La Perouse, Oxford Falls
	aureoviride var. *elmae* (1927)	Castle Cove, French's Forest, La Perouse, National Park, Oxford Falls, Pt. Hacking.
	rufum (1884)	East Hills, Gladesville, Manly, National Park.
	unicum (1942)	Normanhurst.
	densum (1923)	Lane Cove.
	viride (1927)	Collaroy, National Park.
	plumosum (1928)	Botany, Kurnell.
	filiforme (1929)	Castle Cove.
	reflexum (1885)	National Park.
	fimbriatum (1926)	Chatswood, Clifton Gardens, Cowan, Castlecrag, Lane Cove, Middle Harbour, Manly, North Shore, North Sydney, Parramatta Park.
	morrisii (1938)	Oxford Falls.
	woollsii (1885)	Hornsby, Lane Cove.
	ruppii (1923)	Chatswood, Lane Cove.
Genoplesium	*baueri* (1918)	Gladesville, Longueville, Lane Cove, Port Jackson.
Caleana	*major* (1887)	Bondi, Botany Bay, Hornsby, La Perouse, Roseville, Parramatta River.
	minor (1908)	Gladesville, Pittwater, Wahroonga
Spiculaea	*irritabilis* (1929)	Collaroy.
Chiloglottis	*reflexa* (1917)	Hornsby, Lane Cove.
	trapeziformis (1887)	Berry's Bay.
	formicifera (1887)	Berry's Bay.
Acianthus	*caudatus* (1889)	Cowan, Cronulla, Kuring-gai, Middle Harbour, Macquarie Fields, Tempe, Woronora.
	fornicatus (1880)	Bankstown, Gladesville, Kurnell, Newport, Port Jackson, Woollahra.
	exsertus (1884)	Gladesville, Hornsby, Lane Cove, Middle Harbour, North Shore.
	reniformis (1897)	Lane Cove, Macquarie Fields, St. Ives.
Calochilus	*campestris* (1886)	Dangar Island, Berowra, Hornsby, Maroubra, Port Jackson, Ryde, Willoughby, Windsor.
	paludosus (1899)	Bankstown, Botany, Hornsby, Kurnell, Lane Cove, Rose Bay, Roseville.
Eriochilus	*cucullatus* (1899)	Belmore, Penshurst, Port Jackson, St. Ives.
Rimacola	*elliptica* (1916)	Middle Harbour, Narrabeen.
Lyperanthus	*nigricans* (1899)	Centennial Park, Cowan, La Perouse, North Head.
	suaveolens (1900)	Dangar Island, Hornsby, Lane Cove, Mortlake, Middle Harbour, Oatley, Parramatta River, Willoughby.
Caladenia	*tesselata* (1883)	Berowra, Penshurst, Port Jackson.
	reticulata (1903)	Gladesville.
	dilatata (1885)	Canterbury, Cooks River, Gladesville.
	carnea (1904)	Hornsby, Willoughby.
	alba (1886)	Bankstown, Hornsby, La Perouse, Oatley, Port Jackson, Richmond, Tempe, Willoughby.
	praecox (1885)	Abbotsford, Bankstown, Epping, Galston, Gladesville, Hornsby, Tempe.
	caerulea (1887)	Canterbury, Lane Cove, Oatley, Richmond.
Glossodia	*major* (1887)	Bankstown, Lane Cove, Oatley, Richmond.
	minor (1881)	Kurnell, Lindfield, Lane Cove, Oatley, Parramatta, Rose Bay, Richmond, Willoughby.
Corybas	*fimbriatus* (1842)	Farm Cove, National Park.
	pruinosus (1884)	Hornsby, Lane Cove, National Park, Ryde, Woollahra, Waverley.
	aconitiflorus (1895)	Georges River, Hawkesbury River, Hornsby, National Park, Ryde.
Cryptostylis	*erecta* (1885)	Berowra, Bondi, Centennial Park, Hornsby, Lane Cove, Manly, Thornleigh, Middle Harbour, Randwick, Watsons Bay.

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The Sydney Orchids. cont.

Cryptostylis subulata (1897)	Centennial Park, Port Jackson.
Pterostylis concinna (1841)	Botany, Bankstown, Longueville, Lane Cove, La Perouse, Port Jackson, Rookwood, Undercliffe, Waverley.
curta (1897)	Lane Cove, Manly.
nutans (1887)	Belmore, Hornsby, Kogerah, Kurnell, Mosman, Mortlake, Newington, National Park, Waverley.
baptistii (1887)	Narrabeen, La Perouse, Oatley, Penshurst.
acuminata (1884)	Botany, Gladesville, Haberfield, Hornsby, Kurnell, Lane Cove.
pedoglossa (1905)	La Perouse, Middle Harbour, National Park.
pedunculata (1884)	Cowan, National Park.
grandiflora (1884)	Gladesville, Cooks River, Hornsby, Manly, National Park, Newington, Kogerah, Mt. Colah, Peakhurst, Ryde, Rookwood, St. Ives.
obtusa (1890)	Hornsby, Hurstville, Port Jackson.
parviflora (1881)	Botany Bay, Hornsby, Kurnell, Lane Cove, Paddington, Rookwood, Ryde.
daintreana (1893)	Cowan, Castlecove, Gordon, Manly, North Shore, National Park, Northbridge, St. Ives.
longifolia (1914)	Bankstown, Hornsby, Macquarie Fields, National Park.
Galeola cassythoides (1889)	Frenchs Forest, Hunters Hill, Heathcote, Oatley, National Park, Willoughby.
Gastrodia sesamoides (1903)	Lane Cove, North Shore, National Park.
Spiranthes sinensis (1893)	Centennial Park, Dee Why, Gladesville, Hornsby, Kogerah, Northbridge.
Liparis reflexa (1890)	Heathcote, Leichardt, National Park, Port Jackson.
Dendrobium speciosum (1887)	Cowan, Hawkesbury River, Port Jackson.
gracilicaule (1887)	Port Jackson, Wisemans Ferry.
aemulum (1926)	Hornsby, Port Jackson.
teretifolium (1887)	National Park, Narrabeen, Undercliffe.
striolatum (1890)	National Park.
linguiforme (1894)	Hornsby, Kogerah, Middle Harbour, Narrabeen, National Park, Richmond.
Bulbophyllum minutissimum (1849)	Rushcutters Bay.
Dipodium punctatum (1889)	Berowra, Braddleys Head, Hawkesbury River, Killara, Lane Cove, Manly, Narrabeen, Normanhurst, Oatley, Port Jackson, Penshurst, Tempe
Cymbidium suave (1898)	Hornsby, Killara, Penshurst, Port Jackson.
Sarcochilus australis (1931)	Lindfield.
hillii (1929)	Kuring-gai.

Now, 185 years later, one wonders just how many species were missed by those early orchidists, and just how little is left in 1973 ?

Jim Walker, 27 Stafford Road, Artarmon, N.S.W, 2064.

A.N.O.S. Victorian Group News Bulletin. cont. from p. 80.

Pests of Plants.

In areas of southern Australia where the annual rainfall is twenty inches or more the wingless grasshopper (called "wingless" because only about 5% develop wings) occurs in open country in small, scattered, crawling swarms. These swarms occur scattered widely in rural areas and may crawl into a garden where they can cause extensive damage.

Tree hoppers are large solitary grasshoppers, some of which are grass-green in colour, and therefore not readily noticed. These solitary insects can attack the foliage and buds of plants and cause appreciable damage.

The second group of chewing insects includes those which are widespread and common pests.

a. Earwigs: The European earwig is a serious pest in gardens during certain years when it occurs in large numbers. It is nocturnal and feeds on the tender leaves and flowers of a wide variety of plants.

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Dedicated to the study and conservation of Australasian indigenous orchids.

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A.N.O.S. ANNUAL GENERAL MEETING.

The Annual General Meeting of the Australasian Native Orchid Society will be held at 10.00 a.m. on the 21st. September 1974. The meeting will be at the home of Jim Walker, at 27 Stafford Road, Artarmon.
Nominations close on the 21st. August 1974. Date of election is the 19th. September 1974. Should you require a nomination form, these are available from the Hon. Secretary at the Society's postal address.

A.N.O.S. JUDGING STANDARDS.

A major portion of this issue has been devoted to explaining the development of A.N.O.S. Judging Standards for Australian native orchids and their hybrids.
The final official A.N.O.S. Judging Standards are featured on pages 86 & 87.
The official Orchid Society of N.S.W. Judging Standards appear on pages 90 & 91. These standards, as adopted by the Orchid Society of N.S.W. do not meet with our complete approval However, we feel that they could be considered to be a step forward, but it must be the ultimate aim of all native orchid lovers to achieve the standards as submitted by us, to the O.S. of N.S.W.
For all internal judging A.N.O.S. Council recommend the use of our own (unabridged) standards

MEMBERSHIP RENEWAL

Annual subscriptions are due on the 1st. July, for the next financial year, which concludes on the 30th. June, 1975. Unfortunately this announcement must also include the news that membership fees must be increased. Fees are now $4 annually. Despite the sharply accelerating price spirals we have been experiencing we have maintained fees at the same level for 10 years. We cannot continue to absorb the ever increasing costs, mainly postage. The regular appearance of The Orchadian has never been affected by these problems. Our continuing challenge with The Orchadian is to find, beg, or snitch interesting information for publication. I am happy to report, that for the first time in two years we have sufficient material on hand for two immediate issues! However, do not think that this precludes you from sitting down now, and dashing off an article. It's always the same complaint in some quarters, too many technical articles! However it's nearly always the technical or near technical chap that gets down to actually contributing.
And a happy native orchid growing and showing, to you this season!

AUSTRALASIAN NATIVE ORCHID SOCIETY JUDGING STANDARDS.

Objectives.

Following much discussion regarding the obvious necessity for Australian Native Orchid and Australian Native Orchid Hybrid Judging Standards, the Australasian Native Orchid Society Council in April 1971 convened a Judging Standards Sub-Committee consisting of Lloyd Bradford (40 years experience in growing Australasian native & exotic orchids), Bob Lowe (10 years growing orchids and a lifetime cultivating Australian native flora), Phil Spence (20 years cultivating native orchids), and Walter Upton (over 40 years spent in studying and cultivating the orchids of Europe and Australasia. Wal had the difficult task of Chairing the sub-committee.

The task, and their objective, to formulate Judging Standards for Australasian Native orchids and their hybrids which would meet with the preconcieved ideas of many members of A.N.O.S. Council and in the wider sphere, the judging Committee of the Orchid Society of N.S.W. and the Australian Orchid Council. The standards were to be presented to the A.N.O.S. Council approval and subsequently distributed to all A.N.O.S. members throughout the World.

To show you just how much they have achieved in 3½ years, the Council have devoted most of this issue to a full exposition of their work.

AUSTRALASIAN NATIVE ORCHID SOCIETY JUDGING STANDARDS FOR AUSTRALIAN NATIVE ORCHIDS & HYBRIDS.

Submitted to the Orchid Society of New South Wales on 3rd. April 1973, as a most suitable standard to be adopted by the O.S. of N.S.W. and through them, to be presented to the Australian Orchid Council as an Australia wide Standard.

STANDARD FOR AUSTRALIAN NATIVE ORCHIDS.

Definitions: A Native Orchid is one found growing on the Australian mainland, Tasmania, or any coastal island under the political control of an Australian State, but does not include those from Trust Territories.

Not to include either natural or horticultural hybrids.

The exhibit: An exhibit must be well established, and of an improving nature. It must not show signs of being recently collected.

Terrestrial - any number of plants of the one species in the one container.

Epiphyte - a plant in a container or any other medium of display to be judged as a whole.

Where clonal differences are apparent the exhibitor may be called upon to nominate the plant to be judged.

Shape:	To be of optimum standard within its own species	30 points
Colour:	Shall include white or any other colour or combination of colours. It should be clear, glistening and fresh, not smudgy or blurred. All markings should be well defined.	30 points
Size:	To be of optimum standard within its own species	10 points
Texture:	The flower or flowers shall be of good texture, fresh, lustrous and without blemish.	5 points
Floriferousness:	The flower or flowers should be well displayed. If more than one flower is normally produced, all flowers should be of even and comparable standard. If it is the habit of the species to open progressively along the inflorescence, only fresh and open flowers are to be judged.	15 points
Habit of Inflorescence:	The stem should display the flower or flowers to the best advantage. They should be evenly distributed.	10 points

Australasian Native Orchid Society Judging Standards. cont.

STANDARD FOR AUSTRALIAN NATIVE ORCHID HYBRIDS.

Definitions: An Australian Native Orchid Hybrid shall be the progeny of only Australian Native Orchids as defined under standards for Australian Native Orchids.
To include natural hybrids.

The exhibit:
Terrestrial - any number of plants of the one grex in the one container.
Epiphyte - a plant in a container or any other medium of display, to be judged as a whole.

Where clonal differences are apparent the exhibitor may be called upon to nominate the plant to be judged.

Shape:	Shall be considered to be an improvement on either or both the parents.	25 points
Colour:	Shall include white or any other colour or combination of colours. It should be clear, glistening and fresh, not smudgy or blurred. All markings should be well defined.	20 points
Size:	To be relative to the optimum for the parents.	20 points
Texture:	The flower or flowers shall be of good texture, fresh, lustrous and without blemish.	5 points
Floriferousness:	The flower should be well displayed. If more than one flower is produced, all flowers should be of even and comparable standard. Total yield should be taken into account.	15 points
Habit of Inflorescence:	The stem should display the flower or flowers to the best advantage. They should be evenly distributed.	15 points

Letter from the Orchid Society of N.S.W. regarding the A.N.O.S. Standards Submitted.

The Orchid Society of New South Wales Ltd.

2 Thomas Street,
Cronulla.
27th March, 1973.

The Secretary,
Australian Native Orchid Society,
627 Port Hacking Road,
Caringbah.

Dear Eric.
Further to our telephone conversation to-day the thought occurred to me the A.N.O.S. standard I hold may differ from those now being used so I am attaching a copy of the standards referred to by me.
I am looking forward to meeting some of your judging panel when convenient.
With personal regards.

Yours sincerely,

A.J. Bell.
Registrar.

Australasian Native Orchid Society Judging Standards. cont.

Standards attached to the O.S. N.S.W. letter of 27th March 1973.

STANDARD FOR AUSTRALIAN NATIVE ORCHIDS.

Definitions: A native orchid is one found growing on the Australian mainland, Tasmania, or any coastal island under the political control of an Australian state, but does not include those from Trust Territories. Not to include either natural of horticultural hybrids.

An Exhibit: Terrestrial - any number of plants of the one species in the one container.
Epiphyte - a plant in a container or any other medium of display, to be judged as a whole.
Where clonal differences are apparent the exhibitor may be called upon to nominate the plant to be judged.

Shape:	To be of optimum standard within its own species.	25 points
Colour:	Shall include white or any other colour or combination of colours. It should be clear, glistening and fresh, not smudgy or blurred. All markings should be well defined.	25 points
Size:	To be of optimum standard within its own species.	5 points
Texture:	The flower or flowers shall be of good texture, fresh, lustrous and without blemish.	5 points
Floriferousness:	The flower or flowers should be well displayed. If more than one flower is normally produced, all flowers should be of even and comparable standard. If it is the habit of the species to open progressively along the inflorescence, only fresh and open flowers are to be judged.	10 points
Habit of Inflorescence:	The stem should display the flower or flowers to the best advantage. They should be evenly distributed.	10 points
Culture:	The exhibit must be well established, and of an improving nature. It must not show signs of being recently collected. Consideration shall be given to the condition in which the exhibit is presented and points allotted accordingly.	20 points

STANDARD FOR AUSTRALIAN NATIVE ORCHID HYBRIDS.

Definitions: An Australian Native Orchid Hybrid shall be the progeny of only Australian Native Orchids as defined under standards for Australian Native Orchids.
To include natural hybrids.

An exhibit Terrestrial - any number of plants of the one grex in the one container.
Epiphyte - a plant in a container or any other medium of display, to be judged as a whole.

Where clonal differences are apparent the exhibitor may be called upon to nominate the plant to be judged.

Shape:	Shall be considered to be an improvement on either or both the parents.	20 points
Colour:	Shall include white or any other colour or combination of colours. It should be clear, glistening and fresh, not smudgy or blurred. All markings should be well defined.	20 points

Australasian Native Orchid Society Judging Standards. cont.

STANDARD FOR AUSTRALIAN NATIVE ORCHID HYBRIDS.

Size:	To be relative to the optimum for the parents.	20 points
Texture:	The flower or flowers shall be of good texture, fresh, lustrous and without blemish.	5 points
Floriferousness:	The flower should be well displayed. If more than one flower is produced, all flowers should be of even and comparable standard. Total yield should be taken into account.	15 points
Habit of Inflorescence:	The stem should display the flower or flowers to the best advantage. They should be evenly distributed.	10 points
Vegetative Habit:	Shall be considered in relation to its parents and points allotted for optimum achievement and consideration in which the exhibit is presented and points allotted accordingly.	10 points

All native orchids and their hybrids shall be eligible for awards.

The Orchid Society of New South Wales Ltd.

2 Thomas Street,
Cronulla.
23rd July, 1973.

Mr. E. Marygold,
Secretary,
The A.N.O.S.,
627 Port Hacking Road,
CARINGBAH.

Dear Eric.

I apologise for the delay in reporting to you on your submission for the adoption of a standard for the judging of Australian Native Orchids and their hybrids, but I have been awaiting confirmation from the A.O.C. that our submissions were acceptable.

I am happy to say, I received confirmation last Friday and both matters have been placed on the agenda paper.

Enclosed, please find a copy of each of the standards submitted. You will note they do not vary a great deal from the standards your committee and I decided upon except in the allocati of points where minor adjustments have been made. The committee also decided the definition for an Australian Native Orchid Hybrid needed to be "tighter" and some extra wording has been added there. I feel these amendments should be acceptable to all Societies.

There is one matter on which I would appreciate your committee's comments. I have noted from the Registrar General of the A.O.C. item 4 refers to a matter submitted from Victoria. It is set out as follows:-

"Clarification of Australian Native Orchid Sections". (from Victoria)

- (a) Should species that are endemic to Northern Australia, New Guinea, New Britain and Indonesia, be regarded as "Australian Natives"?
- (b) Are only selected clones of these Species to be regarded as "Australian Natives"?

I look forward to your reply.

Yours sincerely,

A.J. Bell.
Registrar.

Australasian Native Orchid Society Judging Standards. cont.

Standards accompanying O.S. N.S.W. letter of 23rd July, 1973. These standards were, of course, the standards presented by the O.S. N.S.W. to the A.O.C. for ratification at their September 1973 meeting, in Adelaide.

THE ORCHID SOCIETY OF NEW SOUTH WALES LIMITED.

RECOMMENDED STANDARD FOR AUSTRALIAN NATIVE ORCHID.

Definitions

A native orchid is one found growing on the Australian mainland, Tasmania or any coastal island under the political control of an Australian state, but does not include those from Trust Territories or natural hybrids.

An exhibit:-

Terrestrial - any number of plants of the one species in the one container.
Epiphytic - a container or other single medium of display the plant to be judged as a whole except where marked clonal differences occur. Where there are clonal differences the exhibitor may be called upon to nominate the plant to be judged.

Shape	To be symetrical about a vertical plane, and optimum shape within its own species. Broad segments are an advantage.	25 points
Colour	Shall include white or any other colour or combination of colours. It should be clear, glistening and fresh, not smudgy or blurred. All markings and shadings should be well defined.	25 points
Size	Should be large for the species.	10 points
Texture	The flowers shall be of good substance and texture, firm, fresh, lustrous and without blemish.	10 points
Floriferousness	The exhibit should carry a good display of flowers in proportion to its size. If it is the habit of the species to open progressively along the inflorescence, only fresh and open flowers are to be judged.	20 points
Habit of Inflorescence	The stem should display the flowers to the best advantage. It may be arched or straight and should have the flowers evenly distributed.	10 points

RECOMMENDED STANDARD FOR AUSTRALIAN NATIVE ORCHID HYBRID.

Definitions

An Australian Native Orchid Hybrid shall be the progeny exclusively of Australian Native Orchids or their hybrids; that is to say, no exotic orchid shall be included in their ancestry. An Australian Native Orchid hybrid shall not include Dendrobium hybrids of the Ceratobium and Phalaenanthae Group as standards for these already exist.

An exhibit:-

Terrestrial - any number of plants of the one grex in the one container.
Epiphyte - a plant in a container of any other medium of display, to be judged as a whole.
Where clonal differences are apparent the exhibitor may be called upon to nominate the plant to be judged.

Shape	Shall be an improvement on both the parents. Broad segments are an advantage and flower should be symetrical about a vertical plane.	30 points
Colour	Shall include white or any other colour or combination of colours. It should be clear, glistening and fresh, not	

Australasian Native Orchid Society Judging Standards. cont.

RECOMMENDED STANDARD FOR AUSTRALIAN NATIVE ORCHID HYBRID. cont.

	smudgy or blurred. All markings should be well defined.	30 points
Size	Should be large for the genus.	10 points
Texture	The flower or flowers shall be of good texture, fresh lustrous and without blemish.	10 points
Floriferousness	The exhibit should carry a good display of flowers in proportion to its size. If it is the habit of the species to open progressively along the inflorescence, only fresh and open flowers are to be judged.	10 points
Habit of Inflorescence	The stem should display the flowers to the best advantage. It may be arched or straight and should have the flowers evenly distributed.	10 points

AUSTRALASIAN NATIVE ORCHID SOCIETY REPLY TO THE O.S. OF N.S.W.

71 Wesley Street,
Elanora Heights,
N.S.W. 2101.
12th September, 1973.

Dear Athol.

Your letter of the 23rd July to the Secretary of A.N.O.S., refering to the standards for the judging of Australian Native Orchids and their hybrids has been passed to the Judging Standards Sub-Committee, and after lengthy discussion by the sub-committee I have been asked to make our reply.

Firstly our comments on the queries submitted by Victoria

(a) "Should species that are endemic to Northern Australia, New Guinea, New Britain and Indonesia, be regarded as 'Australian Natives'?"

This question shows a complete lack of knowledge of our natives, and creates the impression that when considering standards they have only thought in terms of a few of our larger Northern Australian orchids, otherwise why specifically say Northern Australia. There are many of our natives that are represented in other lands and not just those from Northern Australia, for instance - Thelymitra nuda is found in all states (including Tasmania) and it is also found in New Guinea, - Calanthe triplicata is found well south of Sydney through to many countries well beyond the Commonwealth; one could go on not just quoting terrestrials but epiphytes as well. As a matter of fact of the approximately 90 genera of native orchids found in Australia only one fifth are totally indigenous to this country. A very great number of the species in the other four fifths are to be found outside of Australia, so if we do not regard as Australian Natives the species that are endemic to Northern Australia as well as the other Countries mentioned, then we are doing nothing more than eliminating some of our better known species, (e.g. Dendrobium bigibbum, Den. discolor.) Why pick on these when so many other of our natives are endemic to other countries?

(b) "Are only selected clones of these species to be regarded as 'Australian Natives'?"

This would obviously be impossible to police with such a large number of our species growing in other countries as well. How could one possibly distinguish between those that are true Australian and those that are not? In some instances slight variations od species are seen due to conditions differing in other countries, mainly because these species have evolved under varying climatic or other environmental conditions, but these are seldom obvious to the untrained eye.

Now to the Judging Standards - Australian Native Orchids first. Although you say they do not vary a great deal from the standards our Committee put forward - this is not so. We could not now agree with the standards as attached to your letter. Once again the big error has

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Australasian Native Orchid Society Reply to the O.S. of N.S.W. cont.

been committed and all that can be read into these standards now is 'If its large and round, its good'. I know it is a very difficult task to set up a standard for the 90 different genera but at least lets broaden it, so that as many of our natives as possible will be considered by the judges and not just a dozen big dendrobes, sarcochilus, or the big terrestrial Phaius tankervilliae.

In the standards we submitted we included culture but after our discussion with you we agreed to include this under the definition of an exhibit, now we notice this has been excluded. This is not agreeable to us and we consider under the words 'An exhibit' should appear with the heading General. "The exhibit must be well established, and of an improving nature. It must not show signs of being recently collected". How often do we see Dipodium punctatum on the show bench? Too frequently I am afraid but never of an improving nature and seldom does it come back a second year. What we are saying is that without this clause we are encouraging persons to collect native orchids even when they are impossible (or nearly so) to grow. Conservation must always be in our minds. So frequently an epiphyte is taken out of the bush on its host branch and left on that branch until it slowly deteriorates, but it is still brought into shows until one day we see it no more. Are we to encourage this?

Shape. We fail to see the reasons for the words "To be symmetrical about a vertical plane". Surely all orchids are precisely this (With perhaps the exception of Pterostylis curta, which has a twisted labellum, or the antelope dendrobes which have twisted sepals, and they are never exactly the same; as a matter of fact in some instances the twist goes the same way, and similar irregularities).

One of the characteristics of the family Orchidaceae (or should we say the Order Orchidales) is that it is zygomorphic, and the definition of this word is "bilaterally symmetrical", i.e.,"divisible into two identical halves by only one plane passing through the centre"

To make this wording literally would in actual fact exclude all antelope types (Dendrobium discolor, etc.), Pterostylis curta and many other species that are unfortunate enough not to be perfectly symmetrical about a vertical plane. Would one exclude Angraecum sesquipedale from judging because its tube is so long it has to lie on one side of the ovary instead of being perfectly in the centre?

"Broad segments are an advantage" - Can't agree with this as the whole character of some species would be taken away if segments were broad. What of the pollination factor? Where mimicry is concerned, the shape and size of the segments, particularly the labellum, is very important to the pollinator. How could Cryptostylis leptochila look like an Ichneumonid wasp if the segments were broad and this is but one example. It would appear you are only thinking of the dendrobes or the sarcochilus type of flower when suggesting this wording. How gross and awkward Caladenia patersonii and its allies would look if they had broad segments. More of our natives have narrow to filiform segments than broad ones.

Size. Don't like the use of the word 'large', it can so easily be misconstrued by a judge looking for a big flower. I can't see what is wrong with our wording "To be of optimum standard within its own species". This does not then eliminate any orchid whatsoever. A well flowered plant of Oberonia palmicola could and should be able to beat a Den. bigihbum which is not of optimum standard if the Oberonia palmicola was; but if the word large was used, regardless of its context only a large flowered orchid would win. Perhaps we are expecting too much for all judges to know all their natives well enough to judge each and every species, but at least let us try and eliminate the obvious disadvantages to the majority of our species.

Texture. We object to the use of the word "substance". "The flowers shall be of good substance and texture", The word substance means matter but substantial means solid, big, and it is the general impression that good substance means thick segments. This is surely what we are looking for in cymbidiums and cattleyas but then we are breeding for this, but here we are talking about the species. Many of our natives have paper thin segments, e.g. Chiloshista phyllorhiza, Diplocaulobiums, Dendrobium linguiforme, Den. aemulum, Caladenias. This would mean for instance that Pterostylis cucullata whch has thick segments, would have an advantage over Pterostylis baptistii which has not, why should this be so when it is normal for one species and not the other. The word firm also comes into this category and would eliminate many species. The softness and delicacy of the flowers of such species as Sarcochilus hillii, Rimacola elliptica, Dendrobium teretifolium, Glossodia minor, to name a few, is their most desirable characteristic, so why penalise them. The texture of the flower is all important so lets leave it at that - "The flower or flowers shall be of good texture, fresh, lustrous and without blemish".

continued p. 93.

Australasian Native Orchid Society Reply to the O.S. N.S.W. cont.

Floriferousness. "The exhibit should carry a good display of flowers in proportion to its size". This would eliminate a great number of our species from being considered here, for instance Corymborkis veratrifolia, Dendrobium malbrownii, Cadetia hispida and many more. At the same time it would give great precedence to members of the Taeniophyllum genus in Australia which is all flower and roots and barely any rhizome at all, also the Corybas genus which generally in Australia has one large flower (for the size of the plant) set above a leaf frequently no larger than the flower. And again there is Bulbophyllum minutissimum, here the flowers are twice the size of the pseudobulbs and leaf combined. The words as proposed by us "The flower or flowers should be well displayed. If more than one flower is normally produced, all flowers should be of even and comparable standard" would be far more satisfactory and with good culture these factors can be improved, making a plant worthy of being a winner but without being given any advantage due to its generic characteristics. A freshly collected plant won't display well, but a well grown plant will.

Attached is the Judging Standard for the Australian Native Orchids that is acceptable to us, even then it falls well short of the ideal, but be assured, when we have considered these judging standards we have considered all factors and all species, not just those of horticultural value. From the points score you will see that we consider too many points are given for the floriferousness, but agree to the points for shape and colour being 25 each.

Now to the standards for Australian Native Orchid Hybrids. We agree with the definition but feel that it could be enlarged to cover those Dendrobiums that are outside the Ceratobium and Phalaenanthae Groups but have been hybridised with them. For instance, Den. tetragonum X Den. discolor. This could be left out in the cold by both sets of standards. Perhaps the words could be extended to say "If either of these groups have been hybridised with Dendrobium species of another group, then the progeny should be dealt with under these standards".

Shape. The standards submitted by you say "shall be an improvement on both the parents" This depends on what one is hybridising for. If colour is the prime factor, and providing it is an improvement in this factor it may not necessarily be an improvement in shape on both parents, but once again this leaves rather a lot to the judges - what constitutes an improvement? Because we personally may consider a particular shape is an improvement on both parents this view may not be acceptable to all. So let us assist the judges by saying "Shall be considered to be an improvement on either or both parents" I personally would never agree that any hybrid is an improvement on the species but then this is purely an aesthetic grounds.

"Broad segments are an advantage and flowers should be symmetrical about a vertical plane" The way our hybrids are heading at the present time suggests broad segments are what hybridists are looking for. There is possibly little that can be said against this, if what we want is another saucer shaped flower without any separate character of its own, as I see it, in about a hundred years time all orchid hybrids will look the same regardless of genus. Let us try to keep some distinction in our own native hybrids. Yes, the flower should be symmetrical but the words 'about a vertical plane' are really unnecessary.

Size. "Should be large for the genus" As stated under the native orchid standards the word large can be misconstrued, also if one takes this wording literally, how can we compare the flowers of our dendrobes when they are far from large for the genus in the first place. Furthermore bigeneric hybrids must be considered. Our original wording "To be relative to the optimum for the parents" is quite satisfactory.

Floriferousness. We feel the second half of this section is unnecessary. There is no necessity to breed using what could be considered a poor quality when hybridising, the ideal is to have all flowers open at the same time.

We do not agree with the points in your standards for native orchid hybrids. The stress on shape and colour is too great and insufficient in size and floriferousness.

It would be very easy to go on and on, because the determination of satisfactory standards is of vital importance. What we do now, could greatly affect the future native orchid hybrid, and from the species point of view could affect conservation and the awareness of some of the world's most unique species of orchids.

We trust the forgoing will greatly assist in arriving at a good set of standards, and we ask you to accept any views given, or criticisms made in the true sense of our Society's need and desire to do the best for the native orchid which we consider our responsibility and our heritage.

With kindest regards.

Yours sincerely,

Walter T. Upton
Chairman.
Judging Standards Sub-Committee.

Australasian Native Orchid Society Judging Standards. cont.

The Orchid Society of New South Wales Ltd.

2 Thomas Street,
Cronulla.
22nd. November, 1973.

Mr. E. Marygold,
Secretary,
The A.N.O.S.,
627 Port Hacking Road,
CARINGBAH.

Dear Eric,
I promised to advise the outcome of our submission to the A.O.C. for the adoption of standards for the judging of native orchids and their hybrids throughout Australia. My advice to you would have taken place earlier only I took rather ill on my return from Adelaide and am only functioning on "full steam", now.

Unfortunately, the A.O.C. would not adopt any standards for the judging of Native Orchids and their hybrids. Three states voted in favour of the adoption and three states voted against the adoption. The rules of the A.O.C. provide that when a vote is taken and the voting is even the motion is lost.

I palced the matter before the committee of the Orchid Society of N.S.W. Ltd. and they have decided to adopt the standards for judging within New South Wales. This now means the standards forwarded to you with my letter of the 23rd. July, 1973 will now be used by judges of the O.S. of N.S.W. Ltd. for the judging of native orchids and their hybrids.

With personal regards.

Yours sincerely,

A.J. Bell.
Registrar.

Book Review - FLORA OF THE SYDNEY REGION.

S.C. Clemesha

By N.C.W. Beadle D.Sc. (Syd) Professor of Botany, University of New England.
O.D. Evans B.Sc. (Syd) Sometimes Curator of John Ray Herbarium, University of Sydney.
R.C. Carolin Ph.D. (Syd) Associate Professor of Biology, University of Sydney.
Pteriodophyta and Bipinnate Acacias by:
Mary D. Tindale D.Sc. (Syd) Senior Research Scientist, Royal Botanic Gardens, Sydney.

This book is by the same authors as the "Handbook of the Vascular Plants of the Sydney District and Blue Mountains". It is a larger book and covers a greater geographical area - from the Hunter River to the Shoalhaven River and west as far as Rylstone and Taralga.

The larger area covered, makes the title of the book somewhat of an understatement. The area the book comprehensively treats, contains a variety of soil and climate types, and a very rich and varied flora.

Beadle, Evans and Carolin have handled the immense task of treating the many different plants well. The standard of accuracy is good and the relatively few omissions and errors are mainly the result of the necessarily short descriptions.

The book contains 724 pages and is therefore good value at $13.95.

Some good qualities of the book are: 1. The 8 colour plates are clear and well produced, as are the 8 black and white plates.

2. In some difficult genera such as Eucalyptus, the descriptions of the species is accompanied by a drawing of the buds and fruits. These are of a very high standard and excellent for identification purposes. 3. The glossary of botanical terms is a very useful one as it is comprehensive and followed by diagrams of common leaf shapes, fruit types etc.

The book is clearly printed and on good quality paper.

Because of the immense number of genera and species covered by the book, each has been treated briefly and with only the points that differentaite it from its near relatives included. Individual descriptions vary from about 5 lines, to only 1 or 2. The lenght varies with need.

continued p. 95

Book Review - Flora of the Sydney Region. cont.

The book is laid out primarily as a key to species and one works through this eliminating as one goes, until the decsription of the plant in question is reached. If you have an idea what genus it is, the key helps greatly.

As the book covers the whole flora of the region and I only have a reasonable knowledge of orchids and ferns I have concentrated on these sections to look at in depth.

The ferns section was written by Dr. Mary Tindale, a world authority on South West Pacific ferns as well as other plants, such as the Acacia. As one would expect, this section is highly accurate. The only point I would question is the introduction of Blechnum chambersii Tindale,(formerly called Blechnum aggregatum and B. lanceolatum). This plant is not found in N.S.W., unless in the extreme south. It is absent from the area covered by the book. It has been incorrectly recorded from New South Wales in other fern works, by at least two earlier authors.

The orchid section is treated well. A few minor distribution errors occur and these seem to be due mainly, to having to reduce the descriptions of the distribution to one or two words. No species, not occurring in the area have been accidentally included and the only omission I can find is Pterostylis ceriflora, from the Illawarra region.

In all, this book is an excellent one for anyone interested in the flora of the area covered, or, interested in botany generally. It is not a book for a person interested in one plant family only, such as orchids, where numerous specialised books are available.

The cost of the book is very reasonable for its size and obvious quality.

S.C. Clemesha, 18 Consett Sreet, West Pennant Hills, N.S.W. 2120

SOME NOTES ON NOMENCLATURE.

Eric G. Gordon

Sarcorhiza was the original name used for the intergenerics from Sarcochilus X Rhinerrhiza. However, because of the subsequent discovery of the earlier use of Sarcorrhiza (two r's) as a generic name (not in orchids) it was decided that the name for Sarcochilus X Rhinerrhiza would have to be changed to avoid the close homonymity. The name for this orchid intergeneric is now Rhinochilus, as published in a corrigendum at the end of July 1972 Orchid Review list of new hybrids.

Eric G. Gordon, 1a Greycliffe Street, Queenscliff, N.S.W. 2096

A.N.O.S. Victorian Group News Bulletin. cont. from Vol.4. No. 10

Pests of Plants.

b. Caterpillars: Caterpillars are the young or immature stage of moths, butterflies, and certain wasps called 'sawflies'. A great many caterpillars feed on the foliage and other parts of plants. Among the common caterpillar pests liable to be encountered in gardens are --

(i) the caterpillar of the light-brown apple moth. This is a green smooth caterpillar about one inch long with a brown head; webs leaves together eating out the tissue between, and also destroying buds. It attacks a very wide range of native and introduced plants, and can be a serious pest in the garden, particularly in the springtime.

(ii) the caterpillar of the painted apple moth. This is a black about an inch long, with two tufts of long hairs sticking out in front like feelers or antennae. These caterpillars may occur suddenly in large numbers in a restricted area in a garden, and feed vigorously on a wide range of native and introduced plants. The restricted distribution is due to the fact that the female is a small wingless insect which lays all the eggs in one place.

(iii) Casemoth caterpillars: Like the caterpillars of the painted apple moth they occur suddenly in restricted areas in the garden in large numbers because the female is wingless, and all the eggs are laid in one place. The caterpillars are always enclosed in a silken case, frequently decorated with pieces of leaves and sticks. They feed on a wide range of native and introduced plants.

continued Vol. 4. No. 11.

The Australasian Native Orchid Society.

Statement of Receipts and Payments.

30th. June	1972/'73	1971/'72	30th. June	1972/'73	1971/'72
Membership subscriptions	393.75	411.50	Printing & stationery	35.65	55.98
Bank interest	54.79	86.22	Affiliation fees	15.75	5.00
Sale of orchids	1572.76		Petty cash exp. & postage	93.93	110.25
Sale of car stickers	1.40		Prizes	5.00	15.00
			Advertising		25.50
			Rent - Annual General Meeting	2.50	2.00
			Typewriter maintenance	33.10	30.00
			Dictionery of gardening	52.59	
			Storage cupboard	56.00	
			Car Stickers	80.00	
			Orchid purchases	1200.00	
			Donation - Royal Botanic Gdns.	25.00	
			Sundries		6.00
			Excess of Receipts over Payments	423.18	247.99
	$2022.70	497.72		$2022.70	497.72

Membership subscriptions	393-75	412.50	Printing Orchadian	430.82	341.67
Donations	46.06	51.50	Binding charges	200.25	30.00
Sale of bound Orchadians	60.00	86.90	Petty cash expenditure, Postage & Mailing	210.50	151.69
Sundry sales	54.00	54.65	Insurance	9.35	8.75
Excess of Payments over Receipts	297.11		Excess of Receipts over Payments		73.44
	850.92	605.55		850.92	605.55

Balance carried forward	1501.53	1497.53	Commission		48.00
Sale of Sarcanthinae	5.50	52.00	Balance carried forward	1507.03	1501.53
	1507.03	1549.53		1507.03	1549.53

Statement of Funds.

		1972/'73		1971/'72
Balance at bank 30th. June		2088.24		1956.67
Comprising:				
Balance on Research Fund		1507.03		1501.53
Credit in general fund	3009.71		2586.53	
Debit in Publication Fund	2428.50	581.21	2131.39	455.14
Available funds		2088.24		1956.67

D.M. Tomich A.A.S.A. (S)
Honorary Treasurer

I have examined the books of the Australasian Native Orchid Society, and report that the above Statement of Receipts and Payments is in accordance with such books.

J.R. Pilat
Honorary Auditor.

A NEW SPECIES OF ORCHIDACEAE FROM VICTORIA.

In Muelleria Vol.2. No. 3. November, 1972, David L. Jones describes a new species of *Pterostylis* from Victoria. *Pterostylis aestiva* D.L. Jones sp. nov. "At present apparently restricted to Victoria where it is confined to the highlands of the north-east and is often locally abundant. Its appearance in the highlands and tablelands of southern New South Wales and the Australian Capital Territory is to be anticipated, with a possible extension into Tasmania." A complete description, drawing and discussion may be found in the above publication from the Royal Botanic Gardens, Melbourne.

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THE ORCHADIAN

October, 1974.

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Dedicated to the study and conservation of Australasian indigenous orchids.

COUNCIL

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A N.O.S. ANNUAL GENERAL MEETING.

The Annual General Meeting of the Society was held at 10.00 a.m. on the 21st. September 1974. There being only one nomination for any one position on Council, there was no need for an election for offices.

Membership Renewal.

Annual subscriptions are due on the 1st. July, for the next financial year, which concludes on the 30th. June, 1975.

AUSTRALIAN PLANTS - December 1973. Vol. 7. No. 57.

The Editor of this excellent magazine, well known to all native orchid lovers, has really excelled himself with the December issue! The whole issue of 48 pages features native Australian orchids - their cultivation and propagation. I will not attempt to cover all the delights of the issue, go out and buy a copy. Should you not be able to obtain this back issue at your local newsagent write to W.H. Payne, 860 Henry Lawson Drive, Picnic Point, N.S.W. 2213.
A special feature of the issue is a 2 page article by David L. Jones on *Corybas hispidus* which is a recently described species. To quote the author " *Corybas hispidus* is a recently described Helmet Orchid from N.S.W. and Victoria. It seems in the past that collectors have confused this species with *C. fimbriatus* as superficially both have many similarities." An excellent colour reproduction and drawing accompany the article.

ROSA FIVEASH'S AUSTRALIAN ORCHIDS.

Rigby have just released this new work on the heavily saturated native orchid book market. Our first impression is that the work is of a very high standard with many colour plates. The plates, where necessary give detailed anatomical dissections to clearly highlight the distinguishing features between closely allied species. Text is by Noel Lothian, Director of the Adelaide Botanic Garden. Cost is apparently $19.50.
We will provide a full review in the next issue.

VED

SOME CAPE YORK PENINSULA ORCHID RECORDS.

David L. Jones

Some interesting orchid records were made on a trip to Cape York Peninsula, during August 1971. Increases in distribution are based on the records of Dockrill, as published in "Australian Indigenous Orchids". Some of the records may be well known to regular commuters to Cape York, however, they do not appear to be available in the literature. A few are only relatively minor extensions in range, but, in the author's experience, even these are well worth recording.

Precise localities are not given because of the ravages of commercial collectors. All of the species listed below, were found in various places in the McIlwraith Range, to the north-east of Coen. The trip was made in the company of Bruce Gray and Ron Collins of Atherton.

Habenaria papuana - two specimens were collected amongst vegetation in a monsoonal rain forest. The 'dry' was well under way and the plants were beginning to yellow off and defoliate. Both had flowered and were easily recognisable as the species.

Gastrodia queenslandica - this species was discovered under unusual circumstances. One of the plants of Habenaria papuana mentioned above was removed for cultivation. A strange tuber was found next to the Habenaria, which, during the following season flowered, proving to be this lowly, but remarkable terrestrial. This chance find extends its published range appreciably.

In The Orchadian 2: 125(1968) Clemesha suggests that this orchid is both self pollinating and monocarpic. Studies of the plant I collected, show that he is wrong in both cases. The flower lasted for about three days and then withered normally, with no suggestion of swelling of the ovary. A study of the column indicates that it is adapted for insect pollination and not for autogamy. The elongated tuber also suggests longevity (monocarpic orchids usually have rounded tubers). My plant has survived for a second year and has increased the tuber by about 1 cm. The number of the indentations along its length suggests that it is many years old.

Cheirostylis ovata - a solitary plant was collected amongst rocks on a dry, open, ridge on the outskirts of rain forest. The plant was coming into flower and was removed for confirmation.

Malaxis xanthochila - this terrestrial proved to be quite abundant in shady spots near creeks, in the higher parts of the McIlwraith Range, usually growing in large patches.

Podochilus australiensis - several specimens were found growing on rocks, amongst moss and ferns, in a shady spot near a creek, in dense rain forest. Growing on the same rocks were plants of Thelasis carinata and Phreatia robusta.

Robiquetia tierneyana - this coarse eniphyte was quite common in open, drier situations on the slopes above creeks. In one spot it was growing with another species R. wassellii. Some huge specimens of both were seen.

Schoenorchis densiflora - several small specimens of this dainty species were found on trees near a waterfall. They were growing in a shady position in monsoonal forest.

Eria fitzalanii - several specimens of this coarse species were found on flakey-barked trees on the outskirts of a dry patch of scrub, bordering a creek.

Eria dischorensis - a couple of clumps of this rather uncommon species were found high in a tree in the rainforest. This tree was loaded with interesting orchids including Saccolabium rhopalorrhachis, Phalaenopsis amabilis and Pomatocalpa macphersonii.

Dendrobium baileyii - several large clumps were seen high in rainforest trees bordering a creek. It was growing with D. malbrownii and D. luteocilium; often entangled with the latter.

Dendrobium tetragonum var. giganteum - this orchid proved to be quite common in a number of areas, usually in shaded spots near creeks.

David L. Jones, 2 Kathleen Close, Bayswater, Victoria. 3153.

CONCERNING THE SYMMETRY OF FLOWERS.

P.S. Vadilo

Crystollopera J.J. Schafranowskii, in his reports to learned societies, in his monograph and textbook, asserts that living beings have a symmetry in their external form and that it is determined by the force of gravity. As proof of the correctness of his assertion, he explains that blossoms, directed upwards, have several planes of symmetry; i.e., planes which divided the figures into equal mirror-image sections. Upon positioning one section before a mirror, it and its reflection, give the impression of the whole figure, whereas blossoms directed laterally have only one plane of symmetry. Examples of the first blossoms (according to the

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Concerning The Symmetry of Flowers. cont.

opinion of Schafranovskii) are the blossoms of chamomile, star thistle and sunflower; while examples of the second are those of orchid and pea. Here we run into misunderstanding, if not ignorance. Chamomile, star thistle and sunflower are not blossoms, but rather blossom clusters.

With the sunflower, the blossom cluster, and consequently also the blossoms, are directed laterally and not upwards. With double-flowering flowers, there are no planes of symmetry at all. With many, flowers are directed to all sides, but the planes of symmetry with each flower of a given species are identical. Exceptions are rare, and they are not to be had in each species. With the lilac, in place of the usual four leaflets there can sometimes be 3 or 5.

Symmetry in flowers, as in every living organism in which it exists is determined not by the force of gravity, but by its (i.e. the organism's) mutcebility in phylogenesis, and by the struggle for existence.

Unfortunately, these apparently indisputable refutations of the assertion of Schafranovskii are printed neither by biology, nor pyhsics journals. This is apparently explained by the fact that biologists do not know crystallography, while physicicts do not know biology. It is therefore not of interest to them to know whether animals have symmetry and how the symmetry is determined.

References:
1) J.J. Schafranowskii "Lek ii no kiullomorfologii (Lectures about crystallomorphology) Publisher 'Higher School' Moscow, 1968.
2) J.J. Schafranovskii "Crystallography (text book). Publisher 'Higher School', Moscow, 1972.

Dr. P.S. Vadilo, Dr. Sc., Pilutova 40-1-53. Leningrad, L-264, 198264, U.S.S.R.

It was the original intention of Council to publish Dr. Vadilo's letter in the form received, however, due to technical problems relating to his letter being hand printed on both sides of the sheet, we have merely copied his interesting paper. For the further interest of members I have extracted portions of his accompanying letter. I wish I could write in Russian as well as Dr. Vadilo does in English!

"It is known that the stem, leaves and flowers of some orchids grow down, but the stem, leaves and flowers of most orchids, and other plants, grow upwards, why?
I have written the manuscript about the growth of wheat and other plants on the lower surface of soil, suspended (in net boxes) in air, in certain conditions plants grow down even more rapidly than in normal conditions. To my mind this phenomenon has practical meaning for agriculture and cosmonouts."

GROWING SARCOCHILUS HILLII AND S. TRICALLIATUS.

G.R. Young

The author has grown *Sarcochilus hillii* and *Sarcochilus tricalliatus* in Sydney for the past eight years. Both species will grow and flower freely in cultivation, although plants may take up to eighteen months to become established on the mounting medium.

Sarcochilus hillii (F. Muell.) F. Muell. is a small epiphyte found on the coast and tablelands from the Illawarra district of N.S.W. to Rockhampton in Queensland.

The leaves are thick, channelled, olive to dark green and often spotted. The flowers are white, sometimes pink, up to 1 cm. in diameter, with purple on the inside of the labellum. The species flowers from November to February.

Natural environment: Although this species is found growing well on trees overhanging creeks in rain forests, the best examples of *S. hillii* are seen on trees in dry sheltered gullies, often far from the coast. Regardless of whether the plant is growing in a humid or dry environment, it is always in a position where air is freely circulating around it. During dry periods the leaves may die off, but the roots still appear healthy.

Cultivation: The author has grown *S. hillii* on tree fern fibre, paper bark and even old floor boards, as well as living hosts, *Casuarina* and *Leptospermum*. *S. hillii* should be grown dry in a sheltered position, where air is freely moving around the plant.

Watering: From the author's experience it is best to wet the roots rather than the stem and leaves. Once the plant is established, water at one to two week intervals.

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Growing Sarcochilus hillii and S. tricalliatus. cont.

Insect pests: Two species of scale insect attack the racemes of S. hillii and can destroy the flower buds. Nicotine sulphate (if available) and malathion (Maldison, Malathon) are the most effective insecticides. Nicotine sulphate may be used in combination with white oil.

The false spider mite causes mottling of the leaves and hinders the growth of plants. One application of Kelthane (Dicofol) will usually control the false spider mite.

Sarcochilus tricalliatus (Rupp) Rupp, is a tropical species closely related to S. hillii. It is found on the coast of Queensland from Rockhampton, north to Cape York Peninsula. The leaves are thick, channelled, usually a pale green colour and sometimes spotted. The flowers are white, less than 1 cm. in diameter, with some yellow on the inside of the labellum. S. tricalliatus flowers during summer, often as late as February or March when grown in Sydney.

Natural environment: The author has never seen this species growing in rainforests. It is often common on trees growing in dry creek beds and steep rocky gullies. These localities are shaded and sheltered from drying winds.

During the dry season the leaves may die and fall off, with the roots and stem becoming shrivelled. After rain, shoots and roots appear from the stem.

Cultivation: This species will grow in Sydney without the aid of heat or a glasshouse. The author has grown S. tricalliatus mounted on Melaleuca twigs and tree fern fibre.

Watering: It is advisable to only water between October and May. Water should be kept off the stem, leaves and developing racemes, only wetting the roots and mounting medium. Moisture on the leaves can result in the leaves turning yellow and dropping off.

Both Sarcochilus hillii and S. tricalliatus benefit from occasional applications of 'Formula 20' and 'R.D.O. Field Pack' fertilisers, to force root growth.

G.R. Young, 2/38 Percy Street, Lambton, N.S.W. 2299.

A NEW PTEROSTYLIS FROM SOUTHERN NEW SOUTH WALES

Pterostylis oreophila S.C. Clemesha sp. nov.

Holotype: Kiandra N.S.W. On the bank of a small permanent stream. S.C. Clemesha and B. Whitehead, 18th. December 1967.

Plants modice robusta, quindecim cum alta. Folia caulina, tria vel quattuor, basi vaginantia, ovato-lanceolata, 2 - 5 cm. longa (et) 1.3 - 1.8 cm. lata. Flos solitarius, erectus, pro genere amplitudine mediocris. Galea erecta, cucullata, concava, glabra, ca. 3 cm. longa. Sepalia lateralia, 2.8 cm. alta, in dimidio basali connata, tum divergentia atque in acumina brevia galeae altudine fere aequalia constricta. Labellum erectum, apice curvatum, appendice parva et leviter penicellata columna 1.8 cm. alta, alis integris.

A moderately robust plant, 11 cm. - 20 cm. high; tubers about 7 mm. in diameter and attached to the stem by the side. Roots if present, few and small. Stem 2 - 2.5 mm. in diameter. Leaves, cauline, 3 or 4, sheathing at the base, ovate-lanceolate, 2 cm. - 5 cm. long and 1.3 - 1.8 cm. broad,either, all well developed, or all but the basal one bracteate, entire and all veining except the mid-rib inconspicuous. Flower single, erect, pale green, with translucent shading except for the curious aqua shade of the labellum; of medium size for the genus. Dorsal sepal erect, cucullate, concave, glabrous, acute, about 3 cm. long. Petals falcate, lanceolate, and the same length as the dorsal sepal. Lateral sepals 2.6 - 3 cm. high, united in their basal half then diverging and constricting from a broad V shaped sinus into erect or slightly swept back points for their upper most quarter. These are equal to, or only slightly exceed the galea.

Labellum 4 - 5 mm. broad and 1.5 cm. long, erect, prominent, oblong-lanceolate at the base then tapering gently and evenly to a point which is curved and often slightly rolled. Its keel is prominent though the same colour as the rest of the labellum. Appendage small, incurved and only slightly penicillate. Column 1.8 cm. long, curved, lower wings entire, 7 mm. X 2 mm., upper wings 1.8 mm. long and filiform. Stigma narrow and not conspicuous.

Flowering period: December.

Distribution: At present known with certainty only from the type area, where found along 4 small creeks. In 3 of these it grows under light shade to near full sun, in saturated soft sodden black mud, about 30 cm. from running water. Along one of these creeks about 12 colonies were found. At the others it was less plentiful. No other Pterostylis species grew nearby. Three plants were found in heavier shade in a stony creek bed which would run only in rain.

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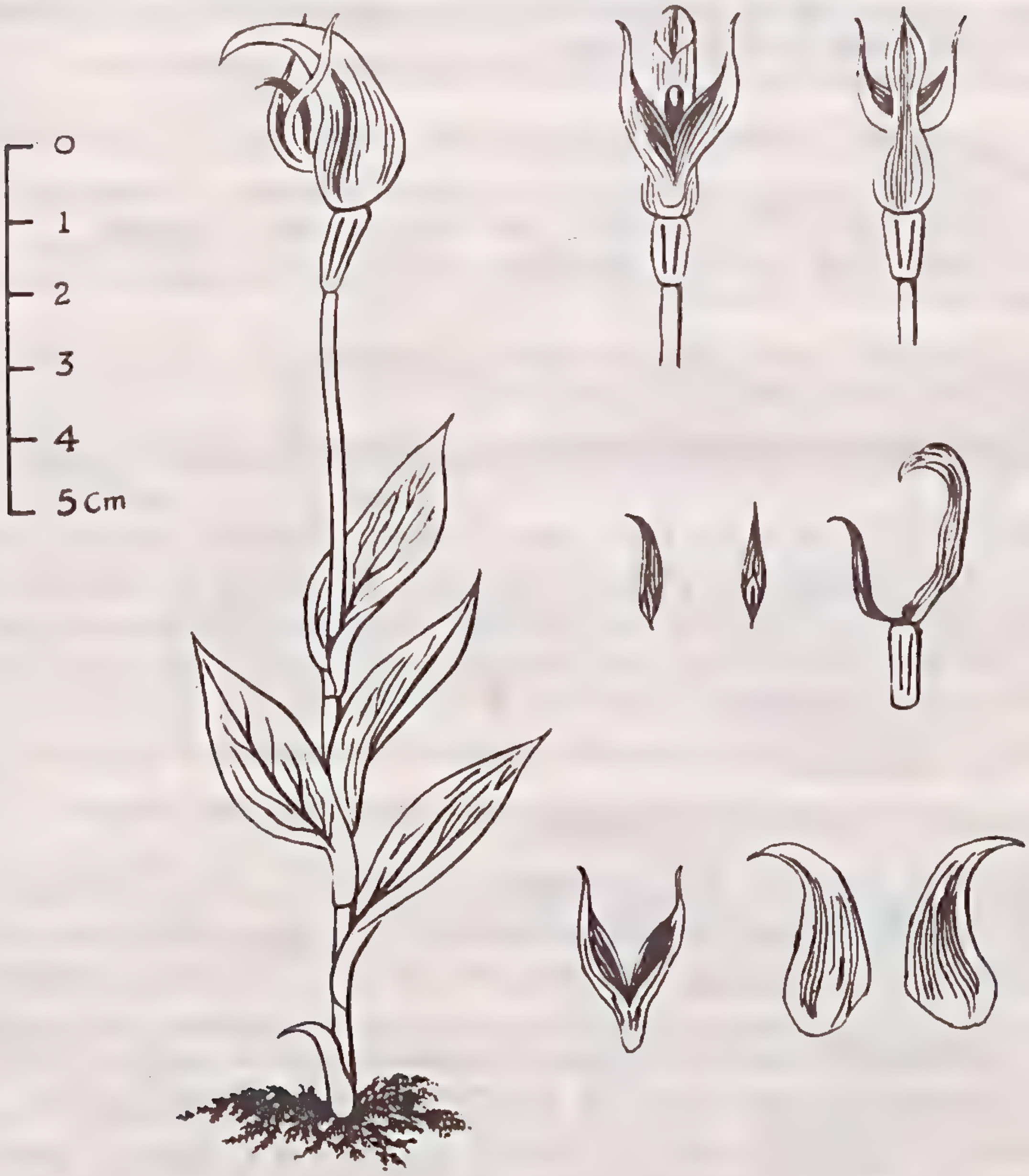
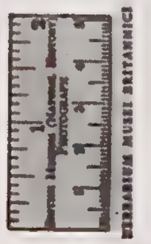
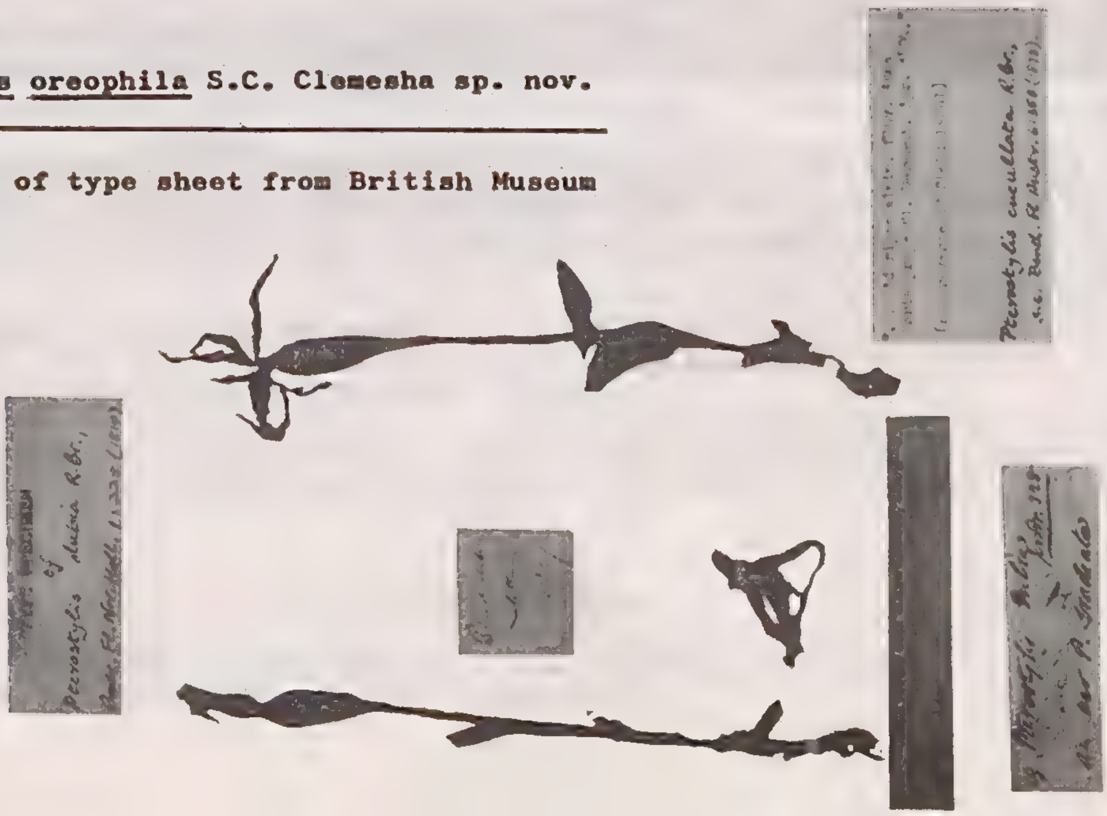
A New Pterostylis From Southern New South Wales. cont.





Pterostylis oreophila S.C. Clemesha sp. nov.

Photograph of type sheet from British Museum



A New Pterostylis From Southern New South Wales. cont,

A few plants of *P. falcata* grew nearby. It is probable that *P. oreophila* will also be found in Victoria and Tasmania. Its name means mountain loving.

Pterostylis oreophila belongs to a group which has caused a considerable amount of confusion in the past.

Its nearest relatives are *P. alpina* R.S. Rogers, *P. furcata* Lindl. and there is a similarity to *P. areolata* Petrie, of New Zealand.

Pterostylis oreophila differs from *P. alpina*, probably its closest relative, in having a greater tendency to produce stem leaves and it produces fewer leaves than *P. alpina*.

P. alpina grows about 12 miles away from where *P. oreophila* is found. When these plants are found under the same light conditions they produce a radial rosette, as well as a few stem leaves.

P. alpina in N.S.W. prefers a generally drier habitat than *P. oreophila* and when it grows on stream banks the plants are firmly bound together by roots of other plants and are not in soft and sodden conditions.

P. alpina has a flower which is generally considerably larger, has proportionately broader lateral sepals, which have a wider sinus and proportionately longer points. The labellum of *P. alpina* is proportionately narrower, more oblong and the tip either blunt, or pointed, but when the latter, constricting near the tip and not gently tapered from the base as in *P. oreophila*. The labellum tip of *P. alpina* is often curved but it never shows a tendency to be rolled, as does that of the new species. The labellum appendage of *P. alpina* is much better developed than in *P. oreophila*. The tuber habit of the last mentioned species differs from that of all other species of the genus with which I am familiar, in that the new tubers are joined to the stem at the side, as in *Microtis* and the new growth bud is not covered by the stem end. This habit persists in cultivation.

The colour of the labellum of *P. oreophila* is an unusual shade of aqua which is not seen in other *Pterostylis* species.

P. areolata Petrie , of New Zealand resembles *P. oreophila* in habit, but its oblong labellum is quite different.

P. furcata Lindl., is the other near relative of *P. oreophila* but all its floral segments are more slender, pointed, and its sinus is much deeper and narrower. Small specimens of *P. falcata* and *P. alpina* have a strong superficial resemblance to *P. furcata* and it seems likely that most, if not all, mainland *P. furcata* specimens are in fact, either *P. falcata* or *P. alpina*.

I have received a drawing of a *Pterostylis* from Tasmania which closely resembles *P. oreophila*, furthermore, there is a plate in Hooker's Flora of Tasmania (1860), which is probably this species also. It is labelled *Pterostylis dubia*. Brown's description of *P. dubia* has the comment after it - "An varietas *P. cucullati*". Bentham in his Fl. Austr. 6:358(1873) reduced *P. dubia* to a synonym of *P. cucullata*. At this time *P. alpina* and *P. foliata* were all considered forms of *P. cucullata*. A photograph of the types specimen of *P. dubia* shows it is not *P. cucullata*, nor is it *P. oreophila*, as its lateral sepals are too long and narrower, and therefore nearer to those of *P. furcata* Lindl. However Brown's description states "periantho pubescentulo" and the flowers of *P. furcata* are not pubescent.

The specimen and description of *P. dubia* are too poor to enable matching with any species. though most refer to a plant of similar proportions to *P. furcata*.

In Tasmania it is likely that *P. oreophila* has been confused with *P. vereenae*, although there appears to be at least one other undescribed species involved in this complex.

I would like to express my thanks to Mr. R. Best for the excellent drawing which he was kind enough to prepare.

S.C. Clemesha, 18 Wesson Road, West Pennant Hills. N.S.W.

PRESIDENT'S REPO T.

I should like to welcome you to this, the 10th. Annual General Meeting of the Australasian Native Orchid Society. An historical meeting in that this is our tenth anniversary year. A year in which much has been undertaken with both financial and intrinsic value to the Society and its members.

Your Councillors have worked hard and long in many fields to further our aims. Attendance at the 12 Council meetings during the year is as follows: R. Lowe 12, E. Marygold 12, J. Walker 10, D. Tomich 9 (of 9 meetings as Councillor), M. Corrigan 10 (the first two missed in ten years as a Councillor), E. Gordon 10, L. Bradford 11 (despite serious operative procedures), P. Spence 9 (of 9 meetings as Councillor), M. Spence 12, R. Napier 1 (prior to premature retirement as President). Councillors not attending all meetings, had of course, leave of absence from the Council.

During the year we acquired, for a very keen price, the collection of orchids belonging to the late and greatly respected Ira Butler. These orchids have been disposed of to A.N.O.S. members and we have realised a good profit on the investment, as well as placing some of the best native orchids and hybrids in Australia, in caring hands.

Warringah Group of the Society has been very active in developing a tract of land within the Stony Range Park in Dee Why and their long labours are really showing to advantage. The Management Committee of Stony Range being particularly delighted!

The Orchadian has been fraught with the very same difficulties of all its previous years. Material for The Orchadian! For despite the many promises, very little real material has been forthcoming. Nevertheless, we have produced 40 pages of interesting and informative material. We are taking measures to try and increase the output this year.

The Australasian Sarcanthinae, which we produced some years ago has sold well and during the year Council decided to dispose of all remaining unbound copies to A.N.O.S. Groups, at no cost. Thes have been very well recieved by all. Bound copies still remain for those who require them.

Bound copies of The Orchadian are still available and continue to sell well. Increased binding costs have forced us to increase the cost to $10 per volume. Unbound copies are still available at reasonable prices.

The funds of the Society have been in a particularly strong position, but the activities during the year see us with an increased cash reserve despite ever increasing production and postage costs.

Membership continues to increse, although membership renewals continue to lag from one year to the next, in many cases despite repeated reminders in the Orchadian, it takes 6 months for fees to be paid. The important thing is however, they are paid!

A sub-committee consisting of myself, Phil Spence, Wal Upton and Lloyd Bradford has been working on new native orchid and native orchid hybrid judging standards for the Society. These will be presented to the Orchid Society of N.S.W. and through them, to the Australian Orchid Council for use throughout Australia.

Another sub-committee under the Chairmanship of Eric Gordon, is working on an A.N.O.S - Ira Butler Memorial Trophy. To be given each year for the best Australian native orchid hybrid benched. As you can imagine this has been a very difficult task and much has yet to be done. However Eric, Phil Spence and Murray Corrigan have details well in hand and expect to begin fund raising very soon.

Sydney Group achieved singular success at the O,S. N.S.W. Spring Festival. They won 2nd. place in the 80 square feet display section and beat North Shore for the placing! North Shore having won 1st. for the previous 10 years. Phil Spence and Murray Corrigan won 1st. place with an 80 square feet display and won 2 silver medals and the Sander Bowl for their display. All the more meritorious as their display did not include a single Cymbidium.

The O.S. N.S.W. Silver Medal presented each year for affiliated society's is to be presented for the best native orchid hybrid, exhibited in the A.N.O.S. display at the O.S. N.S.W. Spring Festival. This year it was won by Brian Taylor.

In closing, I must thank all Councillors who, despite other responsibilities and their strictly honorary capacities within A.N.O.S., have given unstinted support during the year and especially those who through pressure of business are unable to continue in the ensuing year.

Bob Lowe

BIRTHDAY CELEBRATIONS.

Eric Gordon has just finished celebrating his 80th. birthday, although the actual date was the 8th. February. Congratulations and best wishes Eric!

A.N.O.S. Victorian Group News Bulletin.

cont. from Vol.4. No. 10.

Pests of Plants.

(iv) Green looper caterpillars occur uncommonly, but cause damage which may be difficult to check because the caterpillars are so inconspicuous on the foliage of plants that they cannot easily be detected.
The young of some caterpillars, when they are very small (one eighth of an inch), may cause damage to the anthers and other parts of flowers. There are a great many other caterpillars which feed on plants. most of which are confined to certain species, or groups of species, such as the large black sawfly caterpillars which occur massed together on eucalypts; the slug-like cupmoth larvae; the gumleaf skeletoniser, and others which eat the surface tissue on the leaves of eucalypts; the wattle leaf miner, and others.

(c). Beetles and Beetle-larvae (Grubs): A number of beetles, and the young stages of beetles, feed on plants. The most harmful beetles in the garden are certain small dark-grey weevils which hide by day in the soil and feed at night on a variety of plants. They occur in large numbers in restricted areas because the weevils are flightless. Their presence nay be hard to detect, although the damage may be abvious.
Wireworms are the larvae or young of click beetles. They are smooth cylindrical grubs, like small pieces of yellowish plastic jointed pipe. They feed on roots and could possibly feed on orchid tubers below ground, but they are not common in well cultivated soil. Other well known beetles which feed on the leaves of plants include the small humped Paropsis Beetles, the most notorious of which is the fireblight Beetle which feeds on wattles; the big green-and-gold Christmas Beetles which feed on the leaves of eucalypts; and the small brilliant emerald green Cherry-green Beetles which occur in large numbers in certain seasons during the summertime in coastal areas, feeding on native and introduced plants.

(d). Slugs and Snails: Slugs and snails probably cause more damage in the garden than all other pests. There are no harmful native slugs or snails, but there are three or four introduced species of snail which cause damage and about ten different species of introduced slugs. The brown garden snail is the most important species of snail. It hides by day in sheltered places and feeds on a wide range of plants, even climbing trees and shrubs to a height of several feet to feed on the foliage. White snails occur in great numbers in some localities and cause a certain amount of damage. They are conspicuous because they tend to rest in the open. Slugs hide by day in the soil and feed at night on tender plant parts near ground level.

SUCKING INSECTS.

There is a wide range of sucking pests; they include bugs, mealy bugs, aphids, leaf hoppers, lerp insects, scale insects, thrips and mites. Plant feeding bugs range in size from the large brown Crusader bug with the white St. Andrews cross on the back which feeds on the shoots of wattles, cassias and citrus; the small grey Rutherglen bug, and the small black and white Coon bug, which occur mainly in the dry inland areas and feed on a range of native and introduced plants, causing wilting; and even smaller species which cause damage in restricted ares. Mealy bugs occur widely in gardens, causing minor damage; they resemble slaters in shape and their bodies are covered with masses of white waxy, or mealy, particles.
Aphids occur widely on young plant growth in the spring. They are winged and wingless, 1/16 inch in length, soft-bodied, in various colours, causing curling of the leaves and distortion of shoots.
There are a number of different kinds of leaf hoppers, the commonest of which are the minute canary flies, which are widespread in large numbers during the Spring and Summer in some years. Apart from yellow flecking of leaves they cause little damage. Passion vine hoppers, which have white tails when young, and lacy, dark, triangular wings when adult, cause slight damage to tender shoots when they occur on occasions in numbers in a limited area in a garden.
Related to these are the lerp scale insects which sometimes occur in enormous numbers on the leaves of eucalypts, sheltering under waxy scales, and may cause defoliation. There are a great many different kinds of native and introduced scale insects and practically all plant are liable to be infested at different times by scale insects in large numbers, causing loss of vigour and yellowing of foliage. The scale insects and mealy bugs, and related insects, have a very young stage, called a 'crawler' which may be only one fiftieth to one hundredth of an inch in length, and which is easily transported from place to place by wind, birds, humans, etc., and this accounts for the sudden appearance of these pests on plants which have

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COUNCIL

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Hon. Secretary:	Eric Marygold	Editor:	Murray Corrigan
Hon. Treasurer:	Dan Tomich	Asst. Editor:	Joe Betts
Recorder:	Norm Hilliger	Immediate Past President:	Bob Lowe

Membership Renewal.

Annual subscriptions are now overdue, (1st. July each year)

BOUND COPIES - The Orchadian.

Our bookbinders have in production further bound volumes of The Orchadian. These will be available within the next few weeks, allowing us to fulfill outstanding orders which have accumulated over the Christmas holiday period. Should you want copies of any volumes, send your order off to The Society at once. Cost is $10 per volume, including postage.

MEMBERSHIP RENEWAL.

Members are again reminded that fees are now overdue (1st. July each year). If you have not made the treasurer happy, get that cheque off promptly.

MATERIAL FOR PUBLICATION.

Members are requested to consider, and submit, material for publication. Without our regular contributors we would very hard pressed to provide interesting, worthwhile, issues. Don't think about contributing, sit down and let us have your thoughts and experiences, now!

SEED FLASKING.

Members may recall our efforts some years ago, to provide a reliable seed flasking service for our members. Through reasons beyond our control the scheme was a failure, however, several Councillors feel that we now have at our disposal, qualified and experienced technicians who can successfully undertake such a task.
In essence the proposal is that A.N.O.S. subsidise the flasking of Australian native orchid seed for members, the flasks to be returned immediately to the hybridiser for embreyo development. Of course the number of flasks of any one species or hybrid per. member would have to be regulated, as would the total ban on the commercial sale of such seedlings.
The Council urgently requests your thoughts, as Groups and individuals, to the proposal.

THE POLLINATION OF LIPARIS REFLEXA (R.Br.) Lindl.

Ben Wallace

Taxonomy and Ecology.

The subtribe *Liparidinae* is placed in the tribe *Epidendreae*, family *Orchidaceae*. The genus *Liparis* Rich. is large (ca. 250 spp.) and widespread, being represented on all continents except Antarctica (Willis 1973).

Australia has eight or nine species, all apparently endemic and confined to the east coast. The geographic range of *L. reflexa* is the Eastern Slopes and coastal areas of N.S.W. and Southern Queensland.

It is a lithophyte of wet sclerophyll forests, showing a preference for lightly to moderately shaded, moist, positions.

Flowering Phenology.

The flowering period is from February to May with an emphasis on March and April. Earliness of flowering appears to be connected with position of growth-aspect, shade, etc. In the Gloucester (N.S.W.) district, plants grown in cultivation with a minimum of heavy shade and in a warm position, flower in late February, those in an "early" position in the natural habitat, in March and early April, while those in "late", south-facing natural positions, do so during late April and early May.

The length of opening time varies from approximately 18 - 30 days. Those flowers lowest in the raceme open first, though the majority are open at once, the highest few outlasting the others.

Features of the Flower.

The *Liparis* flower does not have many of the features of a "typical" entomophilous flower e.g. a large, bright, perianth and a sweet scent etc.; this is indicative of its pollination method.

Positive factors of its flower form are:

a) Colour - a dull green yellow, further yellowing with age. Percival (1965), states that "Green-bottles (*Lucilia*) have a well developed colour sense and .... react spontaneously to yellow", hence the age yellowing could be interpreted as important, colour attraction increasing while scent diminishes.

b) Odour - *L. reflexa* flowers have, what is generally regarded as, an unpleasant odour; it could be likened to a strong smell of stale (though not rotten) egg yolk. It is sufficiently strong for an average human to detect from a distance of at least six feet.

c) Nectar - the lamina of the labellum of *L. reflexa* has two longitudinal calli which begin, prominently, near the base, decrease distally and disappear at about the middle of the deflexed end section. These apparently secrete a fluid as they are always moist and insects appear to "browse" the surfaces with their suctorial tongues.

d) Perianth Shape and Presentation (see Fig. 10.) - i) because of the modified method of pollen presentation in orchids, the perianth has made two adjustments - a zygomorphic arrangement and the formation of an insect landing platform, the labellum. ii) the remaining perianth segments - lateral petals and sepals, are reflexed and dangling (as in most Aust. *Liparis* spp.) since they are relieved from the "landing stage" task and are able, by the profile formed, to perform a different, attractive function. Kugler, (in Percival, 1965) experimented on Aristolochia with tailed corollas and concluded that "they (flies) perceive and react positively to a shape which has tails".

e) The Column - The organ arrangement on the column is thus: the lowest section, the body of the column, attached to the ovary, contains the pollen duct linking ovary and stigmatic surface which is a cupped area covered with a sticky substance; the column body is winged on both sides. At the top is the anther, an inverted box like structure divided into two separate chambers underneath, each containing a pair of pollinia. Separating the stigmatic surface and the anther is a flat, beaked structure, the rostellum, which projects forward and is also covered (on the underside) with a sticky fluid. The anther cap is lid-like and hinged at the back; the four kidney shaped pollinia, in two closely appressed pairs, (one pair in each compartment), are either loosely hinged to the back, undersurface of the anther cap or quite free. The cap has a small, flanged rim which at the front forms into a forward projecting rostrum.

Insect Visitors.

a) On two occasions, individual flies were observed to enter *L. reflexa* flowers and leave with the yellow pollinia adhering to their thorax. They were about the size of house-flies, metallic bronze-green in colour and determined to be of the Diperous family *Sarcophagidae*. These flies were the most common visitors to plants both in cultivation and in the field and were also the most thorough in working over each inflorescence. Other insect visitors included:

continued p. 107

Pollination of Liparis reflexa (R.Br.) Ldl. cont.

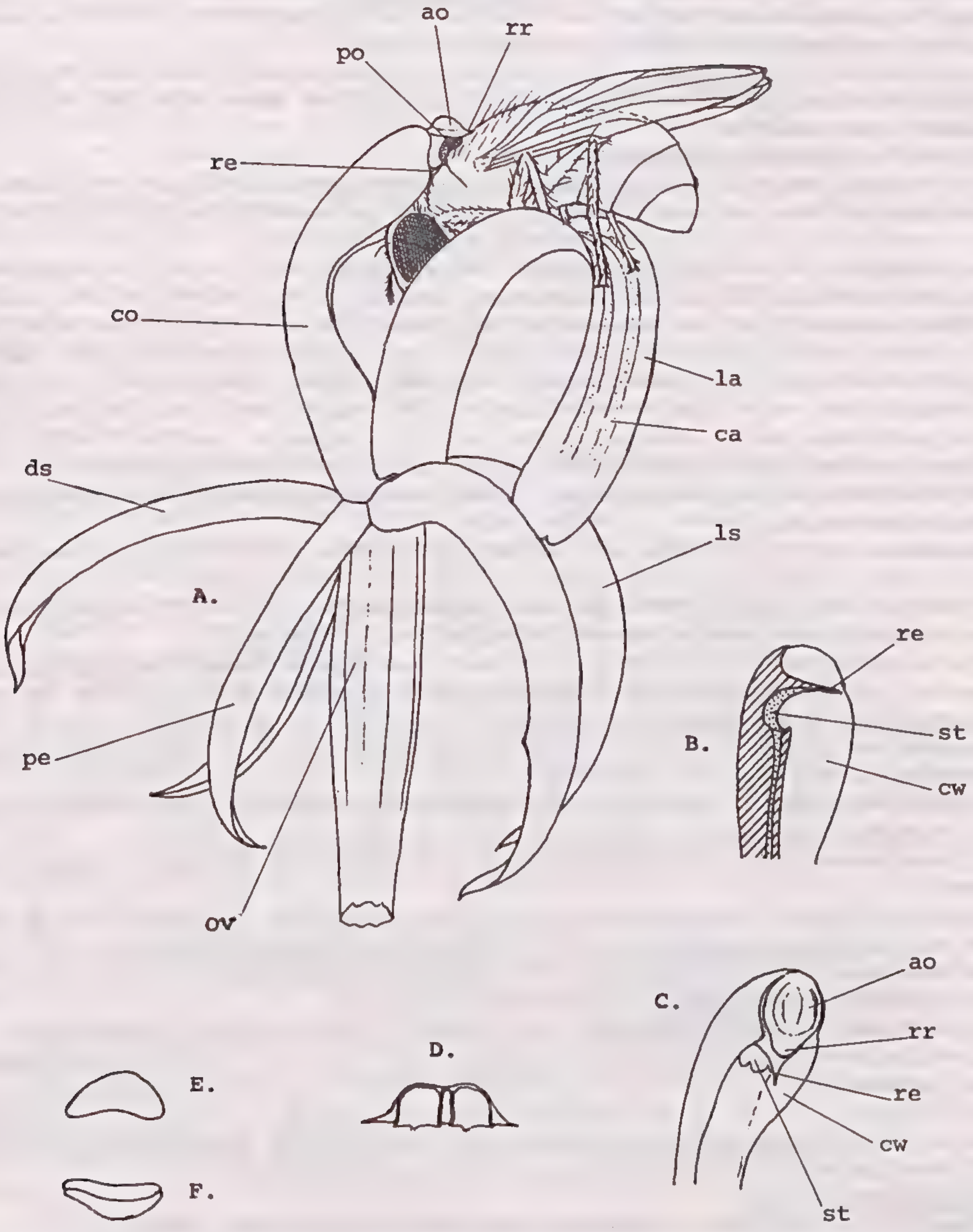

Fig.10 A. Sarcophagid fly receiving pollinia of *Liparis reflexa* (X 12). B. Sagittal L.S. of column apex of *L. reflexa* with pollinarium and anther cap removed (X 15). C. Pictorial view of column apex of *L. reflexa* (X 15). D. Frontal L.S. of anther cap of *L. reflexa* (X 25). E. Side view of pollinia pair (X 30). F. Top view of pollinia pair (X 30).

ao - anther operculum or cap, rr - rostrum, re - rodtellum, po - pollinia
co - column, ds - dorsal sepal, pe - petal, ov - ovary, la - labellum,
ca - callus, ls - lateral sepal, st,- stigma, cw - column wing.

Pollination of Liparis reflexa (R.Br.) Ldl. cont.

b) Dipterous flies of the family Drosophilidae, brown in colour and slightly smaller than the above. They were not as active and did not appear to be particularly interested in the labellum juices; also, they were probably too small to act as effective pollinators.
c) Small midges of another Dipterous family, Chironomidae, occasionally visited the flowers and appeared to eat the secreted fluids but were rather haphazard in their actions. Almost certainly, they were too small to effect any pollination.
d) Small black sugar-ants, Iridiomyrmex sp., commonly crawled all over the inflorescences and were seen biting various parts of flowers, in particular the labellum, but, as with the midges, were unlikely pollinators.

The Operation of the Pollination Mechanism

A fly attracted to the flowers from a distance by the proteinoid odour, and more closely, by the colour and outline of the perianth, would land on the most convenient projection, the labellum.

From here, it would begin to suck up the juices secreted by the calli, working down to the larger areas near the base. To be of correct size, the fly would have to fit neatly into the throat formed by the opposed concave shapes of the labellum and the column and its wings. On backing out, its thorax dorsal surface would brush the rostellum and thus be smeared with the sticky fluid. In the same way, and immediately following this, the anther cap would be lifted and the pollinia would fall onto the (now sticky) flies back, adhering to it. On entering another flower the pollinia would adhere to the sticky stigmatic surface, effecting pollination and new pollinia would be picked up in the above described manner.

These actions can be simulated by using e.g. a match-head and easily observed under a hand-lens or dissecting microscope.

The following experiments were carried out to determine the rate of fly or ant pollination of L. reflexa.

1. A plant with four flowering racemes tha was extensively visited by ants, was placed in a cage of fly-gauze so that ants could reach it but flies could not.
2. Another plant, also with four racemes in flower was placed near the caged plant but not enclosed; a flange of aluminium foil was fitted around the peduncle of each raceme, making the flowers inaccessible to ants but not flies.
3. A third plant had its three racemes flanged with foil and was placed in a cage so that it was inaccessible to more or less all insects.

Results: 1. The plant accessible to ants only, was not pollinated effectively - no seed was set, from 53 flowers.
2. The plant accessible to flies only, set a total of nine seed capsules from 47 flowers.
3. The control plant, inaccessible to all insects, set no seed from 37 flowers.

In conclusion, it may be drawn from the above discussion and observations, that Liparis reflexa, in the Gloucester district is probably mostly pollinated by Dipterous flies, in particular, a species of Sarcophagidae common in the area.

Since the racemes and seed capsules persist for several years after flowering, it was possible to calculate the ratio of successful pollination to failures by comparing the number of capsules to flower nodes. 94 racemes were counted - these had 1,137 flower nodes, 254 of which held pods - approximately 1: 4.5, a pollination success of 22%.

Acknowledgement: The assistance of Mr. R. Hardie of the Zoology Department, U.N.E., in the identification of the various insects, is gratefully acknowledged.

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TERRESTRIAL ORCHIDS OF GALORE HILL NATURE RESERVE.

Alan Logan

While travelling along a highway through pastoral or agricultural land, how often does the orchid enthusiast think; "I wonder what species grew here before it was cleared ?" As most of the level and undulating land was denuded of natural vegetation long before any detailed botanical survey could be made, the present-day researcher is left with the recorded findings of previous cursory expeditions and a few scattered areas of natural bushland, usually rocky hills, from which to glean some information regarding the possible orchid representation of the area.

Galore Hill is one of these rocky hills, situated 64 km. (40 miles) west from Wagga Wagga, 15 km. (9 miles) north from Lockhart and is readily accessible from the Sturt Highway and the Lockhart- Narrandera Road. The hill rises abruptly 217 metres (700 ft.) above the surrounding Riverina plain, the highest point being 379 metres (1240 ft.) above sea level. Unlike its neighbouring peak, The Rock, Galore Hill has an erosion resistant cap of brown conglomerate, overlain by various sandstones and siltstones, laid down by a vigorous stream system during the Upper Devonian to Lower Carboniferous Periods. These sedimentry strata were gently folded during the Kaimblan Orogeny in the Mid Carboniferous Period. The Narrandera Range and the hills between The Rock and Yerong Creek are other nearby remanats of these broad open folds.

Botanically it is situated within the South West Slopes province, (Anderson, 1948) but the dividing line between this and the Western Plains province is only approximately 16 km. (10 miles) to the west.

The reserve covers an area of approximately 380 hectares (940 acres) and was dedicated as a nature reserve in 1969, when control passed to the Lockhart Shire Council. Previously the area had been subjected to grazing by sheep under a leasehold tenure, however this practice was discontinued and native animals reintroduced. Compilation of a list of native flora occurring on the hill was undertaken by various groups and up to 1972 five orchid species were recorded. During 1972-73 an intensive survey was made by the author and Mr. Frank Prichard, Lockhart Shire Engineer, which increased the number of species to eighteen.

SPECIES RECORDED AND DISTRIBUTION.

(Abbreviated months after species indicates main flowering period.)

Glossodia major, Acianthus reniformis (Sept.-Oct.), Microtis parviflora (Oct.-Nov.) and Pterostylis nana (July-Sept.) are widespread and fairly common, occurring in most situations and aspects. Caladenia carnea (Sept.-Oct.) is fairly common on the plateau area around the summit, while Caladenia deformis (Aug.-Sept.) is restricted to the same area along the road to the summit. Caladenia dilatata, Calochilus robertsonii, Thelymitra pauciflora (Oct.-Nov.) and Diuris maculata (Aug.-Oct.) have a sparse distribution along crests of southern ridges. Pterostylis revoluta and Eriochilus cuculatus (Mar.-Apr.) are reasonably plentiful on ridges and slopes with southerly aspects and a few scattered plants can be found on plateau areas. Pterostylis parviflora (Mar.-May), Pterostylis laxa (Apr.-May), Pterostylis alata (Jul.-Aug.), and Pterostylis scabra var. robusta (Jun.-Aug.) can be found along southerly facing slopes, but all have a fairly restricted distribution. A few scattered plants, some fruiting, of an Autumn flowering Prasophyllum sp., possibly P. nigricans, have been observed on slopes west from the summit, while three flowering plants of Caladenia caerulea (Aug.-Sept.), were located on the western edge of the summit plateau.

COMMENTS ON THE SPECIES.

The surprise recording is undoubtedly that of Pterostylis laxa in this very abnormal habitat and surely must constitute the most westerly occurrence of this species known to date. The first colony was located by the author in the morning of the 23rd. April, 1973, and later in the day, a fairly extensive colony with more than 40 flowers was located in the head of a south-westerly gully, on the eastern peak. The flowers of P. laxa at Galore Hill show some variation from the normal in that the filliform points of the sepals are finer, not thick and fleshy, and the apical third of the labellum is thicker. On the 9th. June, 1973, while attempting to determine the extent of P. laxa along the slope west from the saddle, Frank Prichard located the first specimen of Pterostylis scabra var. robusta, (Syn. P. robusta) for N.S.W.

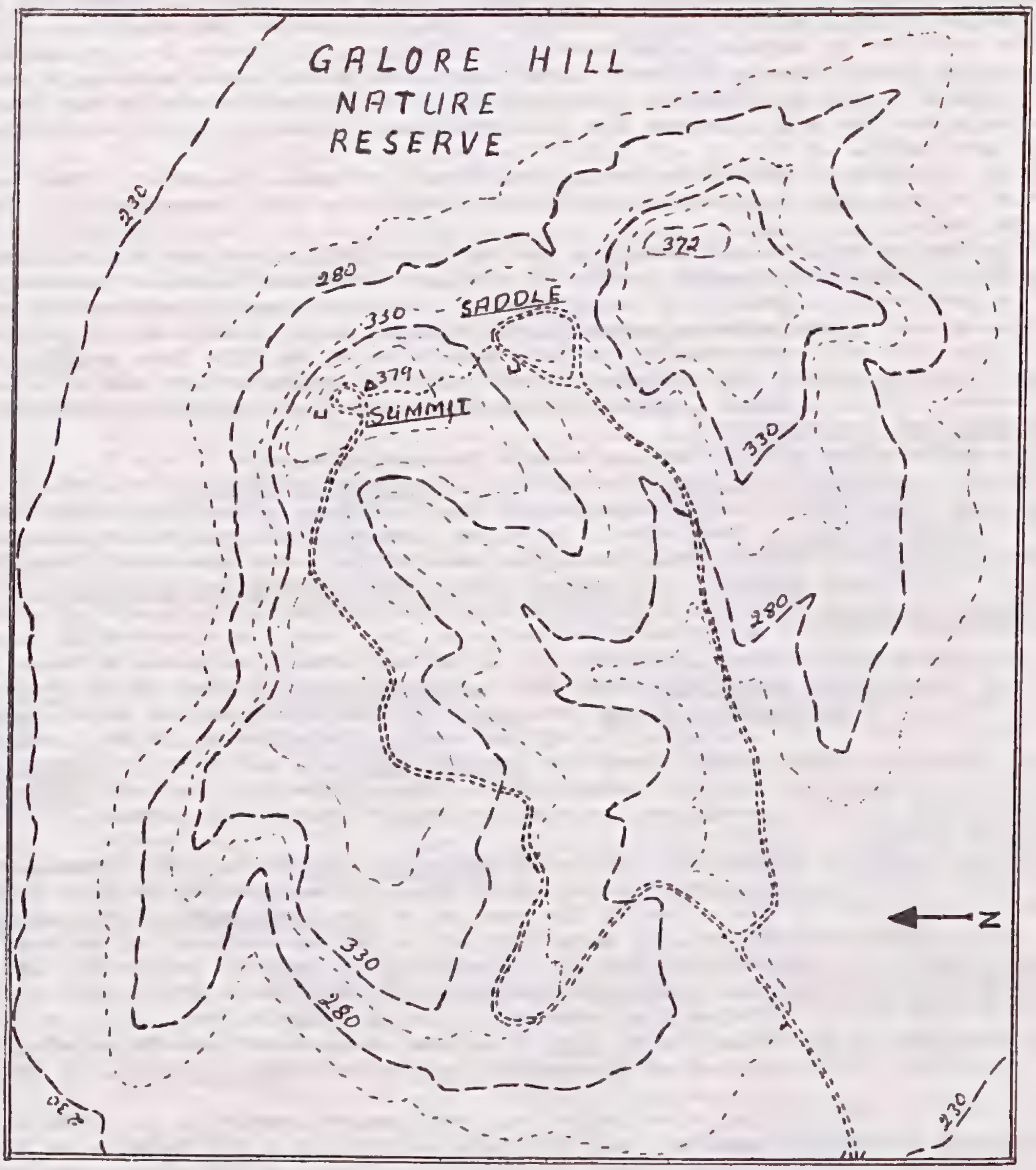
A detailed survey of the species distribution was made by the author on the 30th. July, when when 14 flowering plants and numerous rosettes were located along the three major slopes with southerly aspects. The largest number of plants were growing along the slope west from the summit, where, during August, Frank Prichard also observed a few scattered plants on the plateau, near the road. Flowers were virtually identical to Nicholls'illustration of the species in "Orchids of Australia",

continued p. 110.

Terrestrial Orchids of Galore Hill Nature Reserve. cont.

Pterostylis laxa and *P. scabra* var. *robusta* both ± share the same habitat, growing just below the rimrock of the plateau, extending about 40 m down the talus slope and approximately 150 - 200 m along it. Plants of *P. scabra* var. *robusta* are less numerous than *P. laxa* and due to their diminutive size they are rather difficult to find. As the majority of flowering plants were less than 8 cm. high, it was necessary to search amongst the rock fern (*Cheilanthes tenuifolia*) to find them.

This list is by no means comprehensive as it is possible that occasional plants of other species may be located in the future. The question raised by the survey is; How far does *P. scabra* var. *robusta* extend into N.S.W.?



Alan Logan, "Wodara", Carabost, Wagga Wagga, N.S.W. 2650.

PRESIDENTS REPORT 1974.

May I present my annual report, sadly my last as President, having had nearly three years in th chair. I must give a word of thanks to all members of Council, who have helped me carry out my duties over the period. Murray Corrigan continues to carry out the burden of Editor, even though lacking in articles and material for publication, a monkey he has carried on his shoulder for eleven years. Thanks also to our hard working Secretary and Treasurer, in whose hands a Society either rises or falls. Margaret Spence our Minute Secretary for many years, is standing down and her guidance and undeniable ability will be missed from future Council meetings. Lots of luck Maragaret!

Council held 8 meetings within the past year with average attendances of 7 members. The members being R. Lowe 7, E. Marygold 8, D. Tomich 6, M. Spence 8, M. Corrigan 8, J. Walker 8, L. Bradford 6, E. Gordon 6. Four meetings were cancelled owing to sickness, the flu epidenic and industrial unrest with petrol restrictions and the consequent inability of Councillors to attend, being the prime cause. Notwithstanding, inumerable meetings between small numbers of Councillors were also held during the year!

Despite these problems, 5 Orchadians were produced and some worthy goals achieved. Noteworthy, was the finalising of the late Ira Butler's orchid collection disposal. Many members were able to add some worthy plants to their collections. Secondly, the inauguration of the Ira Butler Memorial Trophies. An award programme for the best native orchid hybrid in any one years spring festivals and an Achievment Award for outstanding activities in hybridising Australian native orchids.

Finally the adoption by the Orchid Society of N.S.W. of our Judging Standards for native orchid species and hybrids. These new standards failed to meet with our complete approval, however, they are at best, a step in the right direction.

Membership appears to remain static at 300 odd, and I would like to see the incomming Council make a concerted effort to attract more members, especially younger members, to the Society. I fear the older and tried members may be becoming less progressive, and new blood with new ideas are needed. The pressures of business and home interests in older people, and education in the young may make it difficult to maintain interest in orchids, but the fact lies, we must have new members and we must keep them interested.

If we don't go forward we go into decline.

In conclusion I wish all good health, and time to enjoy that pleasureful relaxation of growing and flowering our Australian native orchids.

Bob Lowe, 1972 - 1974

STUDIES IN THE ORCHIDALES.

The Society has received a copy of Ben Wallace's magnificent piece of work. His article on The Pollination of Liparis reflexa, which appears elsewhere in this issue, formed part of this major work.

The complete work was presented as a thesis, in partial fulfilment of the requirements for the degree of Bachelor of Science with Honours, at the Botany Dept., University of New England.

Some 144 pages of detailed and painstaking research completed in just 12 months!

The thesis will eventually form part of the "Students Flora of North Eastern New South Wales", a magnificent idea concieved by that lion amongst botanists Professor N.C.W. Beadle. Two parts of this concept have already been published; Part 1, Pteridophytes and part 11, Gymnosperms, Key to Angiosperm families, Angiosperms - Families 37 - 83. Available from the University of New England, Armidale, N.S.W.

JUDGING STANDARDS.

At the recent meeting of the Australian Orchid Council in Brisbane, we understand the Delegates voted in our complete Judging Standards for Australian Native Orchids and Native Orchid Hybrids! Another long battle won!

REVISION OF THE GENUS PHALAENOPSIS by Herman R. Sweet

This work, originally published in parts, in the American Orchid Society Bulletin is now

Revision of the Genus Phalaenopsis by Herman R. Sweet. cont.

available reprinted with consecutive pagination from the American Orchid Society. The author is Professor in Biology, Tufts University and Research Associate, Botanical Museum of Harvard Museum.

Of interest to orchid workers is his reduction of Phalaenopsis amabilis var. rosenstromii (Bail.) Nicholls. to a synonym of Phalaenopsis amabilis var. papuana Schltr. He makes the comment "Phalaenopsis Rosenstromii Bail., of which I have studied the type material at Kew, England, and also living material from Queensland, Australia, through the courtesy of Mr. Cliff Bunn, is in no way separable from P. amabilis var. papuana Schltr.

While the midlobe of the lip of P. amabilis var. papuana Schltr. approximates that of P. aphrodite Rchb.f., the two can be separated easily by the structure of the callus, the position of the lateral lobes of the lip and differences in color."

A.N.O.S. VICTORIAN GROUP NEWS BULLETIN. cont. from Vol. 4. No. 11.

SUCKING INSECTS cont.

been previously free from infestation. Aphids, mealy bugs and scale insects, and related pests may produce large quantities of a sticky sugary liquid which spreads over plants and encourages the growth of sooty-moulds which blacken the plants. The moulds cause no harm but indicate the presence of the sap-sucking insect. Ants andblowflies may also be attracted to the sugar.

Thrips. Thrip insects are extremely minute, about one twentieth of an inch in diameter, with very fine wings. Plague thrips occur in enormous numbers in certain years over large areas and feed on blossoms, and may affect the set of fruit and seed and the appearance of flowers. The greenhouse thrips cause the silverings of the leaves of certain plants and a brown spotting of the back of the leaves.

Mites. Spider mites are extremely small (about one fiftieth of an inch in length), wingless, and resemble tiny spiders. They feed on the backs of leaves causing a yellow mottling, withering, and sometimes death of the foliage. They attack a wide range of plants, and produce a fine silken webbing on the backs of leaves. The webbing may also spread between leaves.

Eriophyid mites are extremely small (one hundredth of an inch, or less), torpedo-shaped mites which feed on plants producing various harmful effects. They are so small that they can hardly be seen with a hand lens. They may cause discolouration of leaves or the formation of small blisters, or they may attack very young buds causing the formation of stunted and malformed shoots, leaves, and fruits.

Glasshouse Pests. It should be noted that the foregoing remarks refer to pests of plants growing in the open. If plants are grown in glasshouses certain pests, such as aphids, mealy bugs, scale insects, thrips and mites, may thrive in an unusual manner in the artificial conditions.

Injuries Not Caused By Pests. Various injuries observed in plants, such as holes in leaves, discolouration, distortion, and wilting, may be due to disease organisms and not to pests. Expert advice should be sought therefore in the diagnosis of the cause of the damage in doubtful cases.

Root Pests. There are very few pests of any significance which attack the roots of plants in southern Australia. If roots are severely damaged this is most probably due to unsatisfactory growing conditions such as incorrect soil types, unsatisfactory drainage; or to disease. Cutworms, the caterpillars of certain species of night-flying moths, occur in Australia, but do not cut off seedlings at ground level as some species do overseas. Cutworms are of little or no importance as pests of ornamental plants in Southern Australia.

Courtesy of Harry Wilson, A.N.O.S.
Victorian Group.

HELP HELP HELP HELP

Mr. R. Datodi of Diamond Creek, Melbourne. 3089., would like information on growing our native orchids. Whilst our Hon. Sec. has referred his general queries to our very active Victorian Group Mr. Datodi is planning a trip to Western Australia in the very near future, and would appreciate contacts in that state. Terrestrials are his particular forte!

THE ORCHADIAN

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ROSA FIVEASH'S AUSTRALIAN ORCHIDS.

Stephen Clemesha's review will appear in the next issue of The Orchadian. Those who have already purchased a copy of this beautiful work will want to ammend their copies, with the numerous corrections to text and copy under illustrations. Those of you who have not yet parted with $19.50 for the work will want to peruse Stephen's review before deciding whether to invest !

EXTRA EXTRA R.D. FITZGERALD'S AUSTRALIAN ORCHIDS.

Members will be delighted to read that commencing with the next issue, we will commence reproducing portions of this rare work as a special centre fold within each issue. You will no doubt be aware that FitzGerlad's work has not been available to the average native orchid lovers library for many years. Your Council, in its continuing efforts to provide you with new, fresh and informative material have decided to undertake this venture. We will undertake facsimile reproductions from the original in black and white. The first facsimile will comprise the front cover of FitzGerald's work, followed by drawing and facing text. The fourth page will feature an up-to-date resume of the featured orchids nomenclature, distribution etc. These pages will not bear the normal Orchadian heading and pagination, as it is felt that many members will wish to remove the centre four pages for separate binding.

MATERIAL FOR THE ORCHADIAN.

Please assist your Council, write an article, or, twist the arm of a friend! Your magazine, The Orchadian needs you, our members to contribute. In our eleven odd years history we have never suffered a more serious paucity of material. Our most vocal critic and a long time contributor, often complains that The Orchadian is too technical and proceeds to write to the contrary. Help him and us by contributing something down to earth and non-technical on the subject you love, out native orchids!

NOT AGAIN!

P. Laverack

The ranks of orchid growers who hate botanists will soon be added to! Recently I noticed that the name of one of our native orchids has undergone a name change for the second time in as many years. Bulbophyllum umbellatum (used to be B. clavigerum, remember?) is now Bulbophyllum longiflorum. The history of all this is that in 1883 FitzGerald named a most attractive plant from Cape York Cirrhopetalum clavigerum. This was subsequently changed by von Mueller to Bulbophyllum clavigerum in 1884 and remained reasonably settled for almost 90 years. A year or so ago P.F. Hunt of Kew Gardens in England noted the similarity between this orchid and the very widespread B. umbellatum and after a study of herbarium specimens reduced B. clavigerum to a synonym of B. umbellatum.

This year Gunnar Seidenfaden while working on the section Cirrhopetalum within the genus Bulbophyllum found that the name B. umbellatum as it had been applied was incorrect and the correct name for the plant with which we are here dealing is Bulbophyllum longiflorum.

Incidentally the controversy over Bulbophyllum or Cirrhopetalum is not yet decided, with some botanists contending that the group is worthy of being included in its own genus. However, I feel the majority at this stage favour the retention of Bulbophyllum as the generic name.

Extracted from "The Native Orchid Bulletin" published by the Native Orchid Society of Queensland, whom we thank for permission to publish this most interesting item.

ENJOY IT WHILE IT LASTS.

Peter Tonelly

For some years now, I have been searching the North-West coast of Tasmania, locating and photographing our native orchids, recording them in areas with dates etc. of flowering. How frustrating it is to locate an area with some superb specimens of one thing or another, only to return the same time a year later to find it cleared, with cattle garzing on it, or a new subdivision has covered it.

The old saying "enjoy it while it lasts", is very evident in a small area of bushland close to my home in the Mersey Valley.

This area will soon resemble the area opposite, across the main road (a 300 acre pine plantation).

The remaining area of natural bushland, covers only an area of about 6 acres, it not only contains orchid specimens of superb size and colour, but usually are to be found in abundance. Every month of the year reveals a terrestrial orchid, commencing in January with Cryptostylis subulata growing in a flat, reedy gully, that runs mainly through the centre of the area. Under the tall Eucalyptus sp., and amongst the prevailing light scrub, Dipodium punctatum stand 80 cm. tall. Amongst the ferns Caladenia dilatata can be observed, with its beautiful scarlet labellum and if one cares to crawl, almost on hands and knees, Prasophyllum despectans can be found. Eriochilus cucullatus is usually found in the hundreds, struggling through the rock hard soil.

From about March Chiloglottis reflexa shows its carpets of leaves, unfortunately the flowers are few and far between, as is common with this species.

The "gems" of the bush, Corybas fimbriatus, C. dilatatus and C. aconitiflorus spread out in colonies, flat to the ground, usually in May and June. Talking of colonies, Acianthus exsertus, A. reniformis and A. caudatus also cover the ground in close proximity to one another, that's if Pterostylis nutans and P. pedunculata give them room!

In Spring Pterostylis nana is certainly dwarfed against Pterostylis longifolia standing 80 cm. high.

Fine specimens of Pterostylis plumosa can be found, as well as Diuris longifolia and Prasophyllum brevilabre.

One has to be careful when walking in the more open area, to avoid stepping on large colonies of Caladenia pattersonii, C. carnea, and two endemic species C. caudata and C. echidnachila, the latter with its 30 mm. long labellum. The sun orchids Thelymitra grandiflora, T. nuda, T. aristata, T. ixioides and T. rubra are always obvious on the bright, hot days. Scattered specimens of Caladenia gracilis can be found amongst the ferns.

Calochilus robertsonii is always magnificent, with its densely covered calli of the labellum, completely the reverse of Microtis unifolia and M. parviflora.

This is one particular area which will be a great loss to the naturalist, orchid lover and nature photographer alike, when that bulldozer drops its blade and the chain saws start their task.

Peter Tonelly, P.o. Box 55, Latrobe, Tas. 7307.

A NEW SARCOCHILUS SPECIES FROM NORTHERN QUEENSLAND.

In the Victorian Naturalist of December, 1972, Vol. 89, 344-346, David L. Jones describes a new *Sarcochilus* species, *Sarcochilus serrulatus* D.L. Jones.
For a complete description and discussion of this most interesting recent species, readers should obtain a copy of the Victorian Naturalist. To enable readers to identify this native orchid from one of its close relatives, I have extracted Table 1,'Contrasting characters', from David Jones' complete exposition. Again I repeat, for a complete appreciation of this species, read the full description in Vic. Nat.!

TABLE 1

Contrasting characters

S. olivaceus	*S. serrulatus*
Leaf margins, slightly undulate, entire	Leaf margins markedly undulate, serrulate
Peduncle slender, the flowers evenly spaced	Peduncle clavate, the flowers crowded
Perianth segments linear spathulate	Perianth segments orbiculare, broadly spathulate or obovate
Lateral lobes of labellum triangular and narrow	Lateral lobes of labellum oblong and broad
Spur slightly dilated near base, only shortly narrow towards apex	Spur dilated near base narrowing considerably towards apex
Callus glabrous, the side calli almost twice as high as the central one	Callus ciliate, the side calli not much higher than the central one
Column foot straight	Column foot curved

RHIZANTHELLA GARDNERI Rogers.

Some interesting correspondence - The following brief extracts are taken from a letter from one of our Western Australian members, and will be of considerable interest.
"... I wrote for information about *Cryptanthemis slateri*. *Rhizanthella* was found here in 1928. He says that *Cryptanthemis slateri* was found in 1927. I had thought *Rhizanthella* was found prior to it. However, after 47 years a botanist over here Alan Douglas wants some specimens to do some work on. We as yet do not know how *Rhizanthella gardneri* Rogers propagates, nor how it is fertilized, noe if the rhizomes are permanent (they look so). In fact we know little, even its position in the soil. I found 39 specimens in 1928. My wife found one in 1940. Bees at Babakin found one in 1962. Apart from those, we have found none. A plough seems the only method of finding it. I want to try out these diviners, who kid themselves they can find anything, but the only flower I know of has been (since 1928) in spirits in Kew gardens and would be unsuitable.
Does *Cryptanthemis slateri* have a rhizome and does it belong to the same family as *Rhizanthella gardneri* Rogers ? The necessities for finding *Rhizanthella gardneri* are *new land with plenty of Melaleuca uncinata* (the small paper bark variety). Summer rain, early & heavy, a fierce fire may help, but as yet, I do not know. Is *Cryptanthemis slateri* hard to find ?......" J. Trott, 'Rhizanthella', Corrigin, W.A. 6375.

Cryptanthemis slateri Rupp, in Proc. Linn. Soc. N.S.W., LVII (1932), 58; Ibid., LVIII (1933), 225; Ibid., LIX (1934), 118; Austr. Orch. Rev., III. No.2 (1938).
Herbaceous subterranean saprophytes with thick white fleshy rhizomes more or less clothed with imbricate scaly bracts. Flowers very small, crowded in capitula terminating the rhizomes. Perianth-segments free. Dorsal sepal short and very broad at the base; lateral sepals half as long again. Petals not much shoryer than the dorsal sepal. Labellum undivided, ovate-acuminate or sometimes blunt, attached to the column-foot by a slender claw. Column as long as the labellum, furnished with two jointed appendages curving beside the anther. Anther obtuse; pollinia extremely fragile, granular. Stigma large.
North Coast. Alum Mountain, Bullahdelah, Slater 11. 1931, Ideolectotype. In herb. Rupp: Same locality, Kesteven and Rupp 10. 1933.
The specimens obtained by Kesteven and Rupp established the point that this remarkable orchid actually develops and matures its flowers below the surface of the soil. The method of fertilization is still doubtful, but it is certainly effective, for in capitula with

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Rhizanthella gardneri Rogers. cont.

flowers past maturity most of the ovaries contain seeds. Apparently after fertilization the capitula are pushed up just level with the ground-surface, presumably to ensure seed-distribution, but in the specimens cited the tops of the capitula with prefect flowers were not less than 2 cm. below ground-level. From The Orchids of N.S.W. by H.M.R. Rupp, p.104-105.

Cryptanthemis slateri Rupp
Also recorded from Queensland. Specimen at National Herbarium of N.S.W. See also Clemesha in Orchadian 2: 143 (1968). From The Orchids of N.S.W. by H.M.R. Rupp, 'Supplement' p.159.

From Rupp we can ascertain that the original specimen was found in November 1931. Several black and white photographs and other interesting observations may be found in The Australian Orchid Review, June 1938, p.32,38-39. wherein Rupp wrote "The bracts surrounding the "head" of flowers are erect, and the flowers themselves are thus almost concealed except from above. They are very small, crowded together in the "head" like those of a sunflower or a flannel-flower. (Comparison with the latter is more apt in the case of Rhizanthella gardneri, the W. Australian underground orchid, which has large floral bracts almost horizontally to the head). The sepals and petals of Cryptanthemis are erect and fleshy; the labellum is dark-coloured and densely beset with minute globular glands. The column has two curious glandular appendages. The German botanist, Lindinger, suggested that Cryptanthemis might be merely an abortive or teratological form of Dipodium, which appeared to be associated with the first specimens found. This hypothetis is groundless, and subsequent discoveries proved Cryptanthemis to be quite independent to Dipodium. It is possible that the mycorrhiza which are in symbiotic relations with both these Orchids are identical."

Rica Erickson in "Orchids of the West", that wonderful work on the orchids of Western Australia, wrote of Rhizanthella gardneri Rogers : "This orchid was discovered in 1928 by a farmer who was clearing virgin ground. The first ploughing turned it out of the soil and botanists learnt with interest of a subterranean orchid which presumably never sees the light of day. Dr. Rogers wrote that "the orchids were found closely surrounding the decayed stumps of Melaleuca uncinata. These were partially rotten through the action of a fungus, the mycelium of which formed in the subsoil dense mattes of a violet colour and webby texture. The main rhizome which was large, thick and rootless was about twelve inches underground. Situated on its summit was the flower head composed of numerous small flowers surrounded by bracts. The lateral rhizomes had slender stems with leafy bracts and smaller terminal buds. The living plant was white, brittle and covered with hairs. Only the tips of the floral bracts were coloured and these became darker when exposed to the light until half the bract became deep purple. No facts were forthcoming about the pollination and seed dispersion of this remarkable orchid."
Soon after the discovery of the Western Australia Underground Orchid another of similar habit (Cryptanthemis slateri) was found in New South Wales apparently in association with the root of an orchid which is itself supposed to be parasitic, Dipodium punctatum. There may be other species hiding in the soil but the discovery of these underground plants is a matter of rare chance. .."

In Orquidea, Vol. XV,n,' 1. Edwin D. Hatch of New Zealand discussed three species of the tribe Polychondreae.
"The study of the underground orchids seems to present a number of interesting problems; problems of origin and distribution, nutrition and ecology, fertlisation, reproduction and adaptation.
I intend to compare here, three species belonging to Schlechter's tribe Polychondreae. Two of them are included in, indeed they comprise the whole of the subtribe Rhizanthellinae Rogers while the third belongs to the Corybadeae Garay. The Rhizanthellinae contain two monotypic Australian genera, Rhizanthella Rogers and Cryptanthemis Rupp. These are truly subterranean plants occuring from 8 - 30 cm. below the surface of the soil.
They consist of a succulent, leafless, rootless, tuberless rhizome bearing a smaller immature capitulum. The main capitulum varies up to 5 cm. diameter and consists of 12 or more elongated bracts forming a tube at the base of the capitulum and arranged in whorls. Thus far the description could apply to either genus or to both.
In Rhizanthella the individual flowers have the sepals and petals united into a 3 - lobed tube with the labellum exserted in the sinus of the lateral sepals. The labellum is large &

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Rhizanthella gardneri Rogers. cont.

connected to the column-foot by a short sensitive claw. The column is adnate to the dorsal sepal and unwinged.

Cryptanthemis on the other and has a much longer, more slender rhizome, with larger flowers the petals are quite free, and the labellum, while generally similar to that of *Rhizanthella* is small and connected by a long claw. The column is free from the dorsal sepal and has prominent segmented column-wings.

Corybas saprophyticus Hatch is confined to the North Island of New Zealand and is the more remarkable because *Corybas* is normally a green-leaved terrestrial genus. *C. saprophyticus* is not strictly subterranean since the rhizome lies upon the surface, but it is subterranean in effect, for it occurs in areas with a very heavy debris layer and may be covered by as much as 15 cm. of humus. The large solitary flower, which may reach a height of 25 mm., is always out of sight beneath the twigs, mould and moss. As in the *Rhizanthellinae*, though slender by comparison, the plant body consists of a creeping, branching, rootless, tuberless rhizome, which similarity is more probably due to the peculiar environment shared by the three species than to any genetic relationship. The solitary terminal leaf is greatly reduced and the whole plant, leaf, rhizome and flower are colourless.

Origin and dsitribution - R.S. Rogers (Journ. Roy. Soc. West. Austr. 15.1928.1) in his description of *Rhizanthella* suggests that its nearest ally is *Gastrodia* R.Br. In this latter genus the sepals and petals are united into a 5-lobed tube and the labellum-form has much the same basic pattern. *Gastrodia* is also a leafless saprophyte. To anyone who has seen the young shoots of *Gastrodia* breaking the surface, with their numerous flower buds compacted into a symmetrically whorled mass, it is not hard to visualise their transformation into a capitulum. I am not suggesting that *Rhizanthella* has derived from *Gastrodia* but I do believe that the two general had a common origin, albeit probably a long way back. *Cryptanthemis* presents more of a problem. Its general likeness to *Rhizanthella* suggests that the two were derived from a common *Gastrodiale* stock, but its free-segmented flowers are more normally orchidaceous than either *Rhizanthella* or *Gastrodia*. This could be the result of subsequent reversion to the free-sepaled condition. The development of highly complicated column-wings is often followed by a consequent simplification of the sepals and petals. The comparatively simple flowers of *Thelymitra* and *Petalochilus* - to quote local examples - are apparently derived from the more complicated genera *Calochilus* and *Caladenia* respectively (refer Hatch Trans. Roy. Soc. N.Z. 77. 1949.398). J.P. Lindinger (Vict. Natr. June 1933) opined that Cryptanthemis was merely a reduced form of *Dipodium punctatum* R.Br. I cannot agree with this - the two genera have nothing except their saprophytic nutrition in common. Further, *Cryptanthemis* belongs to an acranthous subtribe far removed from the pleuranthous condition of the *Cymbidieae* to which *Dipodium* belongs. We have less difficulty over *Corybas saprophyticus*, which is probably derived from the obviously related *C. rivularis* (A. Cunn.) Reichb.f. (refer Hatch. Trans. Roy. Soc. N.Z. 79.1952, part 3).

Distribution in such species is very hard to define since discovery is almost always accidental. Rhizanthella has been recorded from three localities in the Western Australian wheat belt - at Corrigin, Shackleton and Goomalling, covering an area about 100 kilometers diameter, during May - June 1928. From the other side of the continent, 2000 kilometers away on the north coast of New South Wales, on the western slopes of a massive outcrop of alunite near Bullahdelah, *Cryptanthemis* was discovered among the roots of a clump of *Dipodium punctatum* in process of being transplanted into cultivation. Some 12 specimens were collected altogether, during October - December 1931 - 33 from an area little more than 15 metres diameter. *Corybas saprophyticus* was first found in the seedling stage (which is visible above the surface) in October 1949 at Wellsford, a little north of Auskland, and in December 1949 at Waitotara, some 300 kilometers to the southward. In June and July 1950 it was found (as a result of deliberate searching) in flower at Wellsford. When a plant remains out of sight beneath the surface there is no telling where it may be found, and although the recorded localities are both few and far between, these three orchids may well exist in much greater abundance than we at present imagine."

ORCHIDS COMMON TO NORTH QUEENSLAND & SOUTH EASTERN AUSTRALIA.

S.C. Clemesha

In Eastern Australia the distribution of all except drought resisting and mangrove dwelling orchids is interrupted by about a 1,000 mile wide arid zone, where rain forests are absent.

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Orchids Common To North Queensland & South Eastern Australia. cont.

This area is in central Queensland, with the city of Rockhampton at its centre.
While many orchids have been unable to establish themselves in both areas, either because of their seed not bridging the distance, or the other area being too cold or warm, a considerable number of orchids are found in both areas.
These show a tendency to fall into one of a few major groups, though not all fit clearly into one or another.

1. Orchids adundant in both the tropical north and sub-tropical south-east. Here in most cases a considerable difference occurrs between the two populations. Often this difference has led to the naming of one population as a variety, or in cases where the differences have become so great the two are regarded as separate species.
2. Species which are abundant in one of the major regions under discussion, but uncommon or rare in the other. Here there is less frequently a form difference and the suggestion is that either the plants are recent migrants which have not been very successful in establishing themselves in the "new" region, whereas those plants which involve different varieties, or species have altered in their respective habitats to suit conditions in the different area.
3. Finally, there are a number of species either widespread overseas, or within Australia, and here the dry barrier does not seem to form a significant role.

Initially I will discuss this last group, on which the dry region appears to have not had a very significant influence.

Epipogium roseum (D.Don.) Lindl. As this saprophytic species extends north through Indonesia and New Guinea to India, Malysia, Japan and Africa, the gap between tropical and southern populations in Australia seems rather insignificant. It occurs in northern N.S.W. and southern Queensland where it seems to be less common than in north Queensland where it is found from the coast to the highlands. As the time from emergence of flower, to dispersal of seed is extremely short (only a few days), plants are not often seen and a comparison between tropical and southern populations has not been done, but is unlikely to reveal any differences in view of the wide distribution of the plant. The secret of its success in spreading so far is unknown but notable also in Dipodium.
Where the two non saprophytic members of the genus in Australia (Dipodium pandanum and D. ensifolium) have a distribution limited to a small part of north Queensland. The saprophyte Dipodium hamiltonianum extends south to Victoria and D. punctatum has an even wider distribution in which it is abundant. However Dipodium pandanum does not extend to New Guinea. The saprophytic species are capable of growing under a much wider range of climate and conditions than the non saprophytic ones.

Phaius australis F. Muell. and P. tancarvilliae (Banks ex L'Hèrit.) Bl. occur both in tropical Australia snd northern N.S.W. and southern Queensland. Prior to settlement they were fairly plentiful in both areas. P. tancarvilliae as well as occurring in orchid rich north eastern Queensland, also extends across the north of Australia to the Northern Territory and there extends through New Guinea to South East Asia, as far north as the foothills of the Himalayas in India, southern China and Taiwan. Plants from Australia are difficult to flower in cultivation in Sydney, except in a heated glasshouse. This is true of plants from both highland areas of Queensland and the extreme south of the plants distribution in N.S.W.
An Indian race of the orchid, better known under the synonym P. wallichii Kook.f. grows and flowers very well in Sydney and clearly is much more tolerant of cold than the Australian races. So within Australia we seem to have a case of the orchid migrating south but without gaining any cold tolerance in its southern races.
Phaius australis is a close relative of P. tancarvilliae and is a somewhat degenerate self pollinating form which has evolved sufficient differences to warrant specific separation. The exact distribution of the species is uncertain, because of confusion with P. tancarvilliae but it is known definitely from the Barron River to the extreme southern limits of Phaius distribution near North Haven N.S.W. Probably its extends further south than Phaius tancarvilliae, though the precise former distribution of the two will never be known because of the widespread destruction of so many of its habitats. Plants in cultivation in Sydney perform just as poorly as Australian races of P. tancarvilliae, even if from the extreme south of the plants distribution, so here again is a case of migration without adaptation.
This has occurred widely in the Everglades of Florida, where many West Indian species have become established (e.g. Epidendrum and Oncidium species).

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Orchids Common To North Queensland & South Eastern Australia. cont.

Each winter severe cold waves move down from Canada and bring freezing conditions to almost all of the U.S.A. On rare occasions htese reach the extreme tip of southern Florida. When this happens the temperature drops below freezing and kills or damages many plants, especially Epidendrum boothianum.

Calanthe triplicata (Willem.) Ames, has a similar distribution to that of Phaius tancarvilliae outside Australia. Within Australia it is confined to the east, being plentiful in north Australia and in forests and swamps of sub-tropical Australia, to about as far south as Batemans Bay. Overseas this is a variable species of several varieties, but within Australia little variation shows either in morphological structure or temperature tolerance. It is easily cultivated in Sydney, which is not surprising, as it is a considerable distance north of its southern-most habitat.

Dendrobium discolor A.D. Hawkes, is found in coastal mangroves as far south as Rockhampton, & so almost reaches the sub-tropical zone, but only marginally so and is not really a true inhabitant of sub-tropical regions.

Dendrobium mortii F. Muell., extends from about the Clarence River in north eastern N.S.W. to the Herbert River of North Eastern Queensland. As it grows in open scrub and often a considerable distance inland, it is absent from mountain rain forest. The dry region again is not a great barrier to this orchid, as some plants of the species occur in it i.e. near Mackay. There appears to be no marked difference in plants from any parts of its range.

Cymbidium canaliculatum R.Br., is an orchid to which the dry belt has not proven the slightest barrier, since it is a plant of dry open forests and rare, or absent, in rain forest. It occurs right across the northern half of Australia, including right through the area I am calling the dry region, for the purposes of this article. The flower colour varies greatly with few plants identical, but with plants in one region are generally similar. The extreme case is the "variety sparkesii (Rndl.) F.M. Bail., which is deep purple. This is not a botanically valid variety as its difference is in colour alone and all intermediates leading up to it occur. With plants in cultivation in Sydney the "variety sparkesii" always proves much more difficult to manage than plants of N.S.W. origin, unless the former are grown under heated glasshouse conditions. Here a wide distribution has occurred with local adaptation to temperatures.

The next group I will discuss are those plants whose distribution is decidedly "lopsided" and where no form difference is known at present, or where two or more forms occur in one region and only one in the other.

Acianthus amplexicaulis (F.M. Bail.) Rolfe., is quite rare in south Queensland and has only recently been found in the north of N.S.W. In north Queensland it is much more plentiful in the highland rainforests. Like all plants in this group, no clear difference between the northern and southern races has so far been detected, but it is always possible with any orchid in this group that such differences will be found in the future.

Acianthus fornicatus R.Br., is common in many regions of north Queensland's mountain rainforests and it also is very common in southern Queensland and N.S.W.

This must be the most adaptable orchid, since no apparent difference occurs in plants from the two basic regions.

It is an Autumn flowerer so its flowering in N.S.W. is at the same time as the north Queensland wet season so this has made it suitable for adaptation to north Queenslands conditions. Its distribution in north Queensland is restricted by the relatively small region od suitable habitat. Because of its abundance in parts of that region, it is not as truly a member of the "lopsided" group as the others. In N.S.W. this plant is very abundant, but cuts out in the south of N.S.W. though the related A. exsertus does not, & extends to S.A.

Caladenia carnea R.Br. is a very widely distributed orchid and is to be found in almost any open forest land in near coastland and inland south east South Australia, Victoria, Tasmania, N.S.W. New Zealand New Caledonia and Indonesia.

However, specimens from the last two areas mentioned, have not been compared to Australian material by Australian orchidologists recently, so the records are not entirely beyond doubt. Over its wide distribution C. carnea varies enormously and many forms exist. Some nine of these have been named though the great variation within the plant makes these varieties rather valueless in most cases. One of the more distinctive varieties is var. gigantea Rogers which extends from the extreme east of Victoria (Cann River) through coastal N.S.W. and to South Queensland. It occurrs also in open forests of the higher ranges of North Queensland, but, like many others is absent from most of the dry belt of Central Queensland. The distribution of this variety outside the tropics is interesting, being found

Orchids Common To North Queensland & South Eastern Australia. cont.

only in the coastal regions where summer rain and humidity are common. The species does not extend to the dry summer inland areas as do many other "varieties" of *C. carnea*. The var. gigantea is the only variety of *C. carnea* found in the tropics of Australia. It appears to be one which has adapted to a humid coastal climate, and therefore has been able to migrate further north than all the other "varieties" of the plant.

Caladenia alba R. Br., occurs in similar areas (i.e. coastal regions) of subtropical Australia, but so far has not been found in north Queensland, however, if a second *Caladenia* is found in north Queensland, it most probably would be this one.

Cheirostylis ovata (F.M. Bail.) Schltr. In north Queensland this plant grows in rain forests at rather low altitudes (2,000' or less). It has a thin fleshy caterpillar-like rhizome, which remains dormant in the leaf litter during the north Queensland dry season. An orchid which occurs in such places is not one which would be expected to occur outside the tropics, yet it was recorded from Lismore in 1896 and Chatsworth Island in the Clarence River in 1920. By the late 1960's these records were treated with suspicion by many people (myself in particular) but its discovery in the Brunswick Heads region and subsequent collection of very good pressed specimens, has proved the correctness of the plants N.S.W. occurrence. It is now known to be plentiful in the restricted area where it occurs at Brunswick Heads and in a few similar places between there and the Queensland border.

I know of no record of this plant in Queensland south of Mackay, but it clearly should be watched for. The occurrence of this rather tropical orchid in N.S.W. is quite a surprising one and clearly the result of the warm climate of extreme north east of the state

Zeuxine oblonga Rogers & C.T. White, is a somewhat similar orchid to the preceeding one, but lacks the caterpillar-like rhizome and has true roots. In north Queensland it is widespread in rain forests (much more so than the preceeding) of the coast and mountains. As it extends to higher altitudes than *Cheirostylis* so its occurrence in N.S.W. is slightly less surprising. It is known only from a few places between Brunswick Heads and the border and grows with *Cheirostylis*, but flowers at a different time. It would be interesting to know why these two orchids, so similar in habit, have migrated to the warm north east corner of N.S.W. when so many other species have not. Both these orchids require tropical conditions for cultivation, so their southward migration is a case of the plants establishing themselves in a warm region with a climate not too different to that in the tropical north.

Zeuxine to my knowledge, has not been found in southern Queensland.

Chiloglottis reflexa (Labill.) Druce, is an abundant orchid in forests of southern Queensland, N.S.W., Victoria and Tasmania. It is closely related to *C. trapeziformis* FitzG. and *C. formicifera* FitzG., but these flower at a different time (spring) while *C. reflexa* flowers in late summer and autumn. While it is much more plentiful than *C. formicifera* and *C. trapeziformis* which occur in a number of localities in the Western Slopes, including some where the altitude is low, *C. reflexa* does not extend as far inland (its most inland stations are at moderate to high altitudes) and it extends into southern Queensland, whereas *C. formicifera* and *C. trapeziformis* do not. Consequently *C. reflexa* has a generally more north-eastern distribution than its two relatives, and also is an autumn flowerer. Because of this, it would be expected to be more likely to be able to grow in north Queensland than *C. formicifera* or *C. trapeziformis*. This is the case,though so far, *C. reflexa* is known only from a single locality in north Queensland and this is on Mt. Bartle Frere, Queenslands highest mountain. It would appear that this plant in north Queensland is only able to grow in the very highest, coolest places.

Corybas aconitiflorus Salisb. This plant has a wide distribution as it is found in New Zealand, Tasmania, Victoria, N.S.W., and Queensland (north and south). On the north coast of N.S.W. and occasionally as far south as Sydney, a white form is found. It often occurs intermingled with the purple form. Around Brisbane, the white form is the main, or possibly only form. The relationship between the two colour forms is not yet known, but the white form seems too plentiful to be an olbino form.

In north Queensland *Corybas aconitiflorus* is widely distributed in sheltered open forests of thehigher ranges. The form found in the tropics is the purple form and not the white one, as one would expect. To my knowledge the white form does not occur in north Queensland. While the main distribution of this species is in terperate Australia, it is widespread in a rather limited part of the tropics. This is caused by only a restricted area of suitable habitat being available in north Queensland.

Corybas fimbriatus (R. Br.) Reichb.f., also is widespread in temperate Australia and plentiful in many places. It occurs from south eastern Queensland to Tasmania and South Australia.

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1975-'76. COUNCIL

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The Annual elections of Council of the society were conducted without the need for a ballot. There being less nominations for positions on Council than reguired under the constitution. As you will have noted from the above list of Council, your new President is Joe Betts, relatively new to native orchid spheres, but long an orchid lover. Together with the other new Councillors I am sure they will provide stimulating new ideas and progressive thinking to the many problems facing our native orchid lovers.

NEW LIFE MEMBER.

At the Annual General meeting Murray Corrigan was made a life member of the Society. This action honoured his continuous service to the Society since its foundation, as Councillor and Editor.
We now have four life members - Bill Murdoch, Eric Gordon, Alick Dockrill & Murray Corrigan.

A.N.O.S. MEMBERS BADGE.

At last we are to have our own metal members badge! Long requested by members from all over Australia. As a result of the efforts of Norm Hilliger in particular, we are to soon have a beautiful gold and enamel badge, featuring one of our native terrestrial orchids. Next issue we shall have a photograph and a brief description. It's well into production and should soon be available.

ROBERT DAVID FITZGERALD.

As promised in our last issue we commence the reproductions of R.D. FitzGerald's drawings of Australian orchids within this issue. They have required very considerable research on the part of our new President and we trust that you will enjoy them as much as we have! Each issue from now on, we will devote the centre spread of The Orchadian to further reproductions.

1975 PITTWATER SPRING FESTIVAL - ANOS SHOW.

This year for the first time the Sydney and Warringah Groups of ANOS held their own Spring Native Orchid Show. Held in conjunction with the popular Pittwater Spring Festival, the venue was the modern Mona Vale Community Centre. As well as group support, many members of suburban orchid society's and S.G.A.P. participated. Overall the three day show was a wonderful success. Particularly for Norm Hilliger and family who were the backbone of the whole show, both organisation and staffing wise. The Champion Native Orchid of the show was a magnificently flowered specimen of Dendrobium agrostophyllum by M. Corrigan. The Champion Native Hybrid Orchid of the show was a really fine form of Dendrobium fleckeri x D. ruppianum exhibited by Norm Hilliger.

ROBERT DAVID FITZGERALD (1830 - 1892).

Joe Betts

> "Here's a word for you, Robert D. FitzGerald:
> I met your grandfather living under a stone,
> Changed to a small green orchid; where the knobbled
> Dripping red cliff-face towered and the creek fell down
> Through bracken and wattle, rock-fall and wilderness
> To the chasm where the lyrebird sang; yes, there he stood,
> Safe on the brink of bushfire and flood,
> Sarcochilus fitzgeraldi, no less !..."
>
> \- Douglas Stewart

The following biographical notes apply to the grandfather in Douglas Stewart's poem "Sarcochilus FitzGeraldi"; but they have been prepared with the help of his grandson, the distinguished poet Robert David FitzGerald, O.B.E. to whom the poem is addressed. Our thanks are due also to his wife, Manon.

"Australian Orchids" Vol. 1. Part 1. by Robert David FitzGerald, was published a hundred years ago, in July 1875.

To mark that centenary The Orchadian, commencing with this issue, will publish reproductions of FitzGerald's lithographs, selected from both the rare published work and the unpublished lithographs now held in the Mitchell Library, Sydney.

In 1975, it is fitting that readers - especially those who have not had the privilege of seeing FitzGerald's work - should be reminded of his great contribution. In a preface to his "Enumeration of the Unpublished Drawings in the collection of the Mitchell Library, Sydney" (1933) Dr. R.S. Rogers wrote: "This collection is beyond question the finest contribution which has yet been made to Australian orchidology."

As a background to the drawings now reproduced in our centrefold supplement, some notes on FitzGerald as scientist, writer and artist should also be of interest.

FitzGerald was born on the 30th. November, 1830 in Tralee, Southern Ireland, the son of a prominent banker, also named Robert David FitzGerald, who was a strictly orthodox supporter of the Church of England. The bitter sectarian tensions of that period in Ireland seem to have turned the younger FitzGerald away from religion altogether. From boyhood he favoured Nature and could be regarded as an accomplished naturalist before he was twenty. While studying civil engineering at Queen's College, Cork, he took up ornithology, geology and botany; but his later enthusiasm for the work of Charles Darwin was perhaps the most significant influence on his development. As a young man he made the acquaintance of John Gould. He was about 15 when he borrowed a work called "Illustrations of British Ornithology" by P.J. Selby. He was so keen about it that he hand copied three volumes - the text in a neat hand and the illustrations in ink line drawings. Selby was so impressed by his diligence and skill as a draftsman that he presented him with the fourth letterpress volume and had the three manuscript volumes bound to match it. His grandson, R.D. FitzGerald IV showed me the four volumes, beautifully encased in a wooden box with a hinged glass lid. It is difficult to believe that the fine line drawings of the birds could have been completed by the time he was 17; the year 1847 is inscribed on the flyleaf.

That he was a fine artist is apparent, not only from those drawings but also from the colour and form he gave the lithographed drawings of orchids done later in Australia. There is also evidence that, in his early youth, of a considerable literary turn of mind. He contributed poems to the "Kerry Magazine" and it has been my privilige to have one of these read to me by his grandson. Although the latter commented "I have read better verse than this " it was quite competently written and verses written later in Australia showed considerable merit. He was about 26 when the family emigrated to Australia and it would seem that the formative years in Ireland had produced a man particularly well fitted to contribute to the Australian scene: a new world in very great need of both science and culture.

The family settled in Balmain in 1856, and the younger R.D. FitzGerald, who had arrived ahead of the family, joined the staff of the Surveyor-General in the N.S.W. Lands Department as a surveyor. By the time he retired, 31 years later, he had become Deputy Surveyor-General. He had also produced 300 sheets of coloured drawings each depicting from one to three orchid species. The descriptive text that accompanies them has an economy, accuracy and clarity derived from literary talent, and the authority of deep knowledge of his subject matter.

One of his colleagues, Walter Scott Campbell, who joined the Department as a cadet in 1861, wrote a newspaper article in May 1924, describing how R.D. FitzGerald's interest in native orchids began. "I think it was towards the end of 1864," he writes, "that Mr. FitzGerald asked

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Robert David FitzGerald (1830 - 1892). cont.

me whether I would like to take my leave and accompany him with another member of the department on a trip to Wallis Lake... Our Original intention was to cruise about the lake for a while, then proceed to Smith's Lake to the south; then to the Myall Lakes and thence to Port Stephens... As sonn as we landed from the boat we were surprised to see a number of clumps of 'rock-lilies' growing on the tops of large boulders just above high water mark. One clump was remarkably fine... Mr. FitzGerald longed to have this in his garden..." He had intended collecting specimens of bird-life, but "after seeing the magnificent clump of Dendrobium at the entrance to the lake Mr. FitzGerald became much interested in other epiphytal species; we obtained good specimens of several...quite ignorant then of their botanical names... Dendrobium tetragonum...D. Fairfaxii...D. Lingueforme...and some others, making up an interesting collection. We puzzled over these specimens in camp, the peculiar forms of flowers, their bulbs or false-bulbs, leaves and so on... With the assistance of two blacks we secured the huge Dendrobium clump and brought it to Sydney in perfect condition."

That was the beginning. As every orchid collector knows there could be no going back. When FitzGerald moved from Balmain to Hunter's Hill he took with him the clump of Dendrobium speciosum and began experimenting.

He constructed a remarkable fernery - a deep excavation in the sandstone rock with a glass roof overhead; one half of the house being over a deep tank of water "across which rafters were laid an inch or so apart." According to W.S. Campbell the number of species of plants (including ferns) in the house was about 300.

It is said that he explored the shores of Sydney Harbour and the Parramatta River in his own boat and it may have been on of these excursions that his son Robert found Pterostylis baptistii at Fern Bay, Hunter's Hill. The author tells us that it was first discovered at Hen and Chicken Bay, Abbotsford, by John Baptist, a nurseryman in that area who had mistaken this plant for a very large form of Pterostylis curta. Donald McLean, writing in the "Sydney Morning Herald", 17th. April 1971, says that he was told by Robert D. FitzGerald that his own father, Robert D. FitzGerald III, as a boy, used to get a shilling from his father if he found a new genus and sixpence for a new species. No wonder, then, that the grandson was able to report that in an area in Hunter's Hill between Ryde Road and Pittwater Road, "my gradfather identified more varieties of terrestrial orchids than have been found on any other similar place on earth."

All FitzGerald's drawings were made from living material; never from dried specimens. It is difficult to believe when we look at them now, that they were executed with great speed; but it is said that his colleagues were amazed at his rapidity in completing the drawings immediately after collecting the specimens. He had constructed a small microscope with attached adjustable forceps to hold the flower, or its dissected parts. He would hold this up to one eye with one hand while he worked with the other hand and eye to make the careful drawings of details. His grandson showed me two of these custom-made instruments. Skilfully made of brass, their parts fold together to fit into a small container a few inches long and capable of being carried in one's pocket on a field trip.

Having drawn the plates, he would either render them on to stone himself or send them to A.J. Stopps, the lithographer. When the line drawings were printed from the stone, FitzGerald himself coloured the prototype which was then passed on with the other prints to a group of artists who would copy in colour his prints. The value of the two bound volumes of "Australian Orchids" today is priceless. If you have a copy, or your scoiety has one, you are indeed fortunate. If not, you will have a rewarding experience if you spend time in the Public Library of N.S.W. or the Mitchell Library.

The original publication began, in parts, in 1875 (Vol. 1, Part 1). In 1878 a gold medal was awarded by the exhibition Internationale de Paris for the masterpiece "soon to be published", but Volume 1, Parts 1 - 7 was not completed until 1882. It was inscribed by FitzGerald as follows:

"This work on the Australian Orchids is dedicated to the memory of the late Charles Darwin, as a token of the veneration in which that great naturalist and fearless exponent of science is held by the author."

In the Mitchell Library, one can see the original letter written by Darwin accepting the decication and highly praising the work. Looking through FitzGerald's copy of Darwin's own book "The Fertlisation of Orchids by Insects" (inscribed on the flyleaf to FitzGerald in Darwin's handwriting) I found a page turned over at the top corner. On that, and subsequent pages were several references by Darwin to FitzGerald's observations of the peculiar

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Robert David FitzGerald (1830 - 1892). cont.

fertilisation of Cryptostylis species, a technique which was to be studied more closely and to attract great interest from 20th. Century botanists.

Conservationist readers will be interested to learn that FitzGerald anticipated them. In 1869 and 1871 he went to observe conditions on Lord Howe Island with the Director of the Sydney Botanic Gardens, Charles Moore, and William Carron, botanist and explorer, who had survived Kennedy's disastrous expedition from Rockingham Bay to Cape York Peninsula. They reported a number of unique botanical specimens (among them the Kentia palm and, of course, Dendrobium moorei) and recommended that they should be protected. In the course of his duties as a Government surveyor, FitzGerald achieved, with the support of Sir Henry Parkes, the reservation of those areas fronting the Katoomba, Leura and Wentworth Falls. This was done against strong opposition from those who wanted them for private use - or, as McLean puts it "from would-be private developers."

What of the Sarcochilus species that bears his name? W.S. Campbell wrote that it was "discovered in one of the deep, dark gullies at the head of the Bellinger River, either by Mr. FitzGerald, or by his companion, Mr. Enoch Rudder, who frequently accompanied Mr. FitzGerald on his excursions about the district and assisted him considerably."

It was sent to Baron von Mueller for classification and the latter names it S. fitzgeraldii as a token of esteem for his friend. Those who grow it now will recognise this most beautiful species of the genus Sarcochilus as a worthy reminder of the man.

After retiring from the Lands Department in 1887, FitzGerald was able to devote more time to his publication. Vol. 1, Parts 1 - 7 had been published by the Government at the rate of one part each year from 1875 to 1882. Vol. II in five parts, was not completed until after his death (12th. August, 1892). Four parts had been published by 1892, but Part 5 was collated by Henry Deane F.L.S. and A.J. Stopps the lithographer, who had the last number published in 1894.

Joe Betts, 33 Memorial Avenue, St. Ives, N.S.W. 2075

FOOTNOTE ON THE UNPUBLISHED DRAWINGS IN THE MITCHELL LIBRARY.

Joe Betts

R.D. FitzGerald's own set of the two volumes of "Australian Orchids" and most of his unpublished plates were purchased by the Trustees of the Mitchell Library, Sydney. The 92 unpublished plates were examined and reported upon to the Library by the late Dr. R.S. Rogers in May, 1933. His 22 page "Enumeration" provides a valuable catalogue to these drawings and, for the present writer, at least, has provided a mystery which readers of greater experience may be able to solve. Try your skill on the following data and write to "The Orchadian" with your solution:

Item No, 89 in Rogers "Enumeration" reads as follows: "Dendrobium sp. ?
Locality: Not stated
Date 28.8.88

This date comes very close to that (22.8.88) on which FitzGerald's D. eriocarpum (No. 81) was collected on Dinner Island and suggests a clue to the habitat of the present species.

A very handsome plant, nearly two feet high. Roots fibrous, stems slender, terete (or nearly so), slightly attenuated towards the base, elongated, longitudinally furrowed, internodes 1 - 3 inches long. Leaves about 2 - 3 inches long, ovate, elliptical, or oblong-ovate, apparently thick with prominent midrib, crowded towards the apex of the stem. Racemes apparently terminal, on rather long slender peduncles. Flowers white, with reddish purple dots in the centre, very large and showy, about 3 - 3½ inches in diameter. Perianth segemnts widely spreading; sepals elliptic-lanceolate, about 1½ inches long; petals subrhomboidal, acute, slightly longer than the sepals and about three times as wide. Lip white with purple markings on lateral lobes; middle lobe elliptical, traversed by two longitudinal lines with veins diverging from them; lateral lobes white with purple dots upturned, rather small, truncate, arising below the middle of the lamina. Column with purple markings on each side of the oblong stigma. Mentum rather longer than the column proper, blunt, narrowly conical. An undescribed species."

In looking through the Volume of folios of unpublished coloured plates (12) arranged in the order recommended by Dr. Rogers, I was astonished by plate No. 9 (which is the subject of item No. 89 in the "Enumeration".) It seemed to me that such a large showy white flower (three inches in diameter) of amply rounded shape could not possibly be an Australian native

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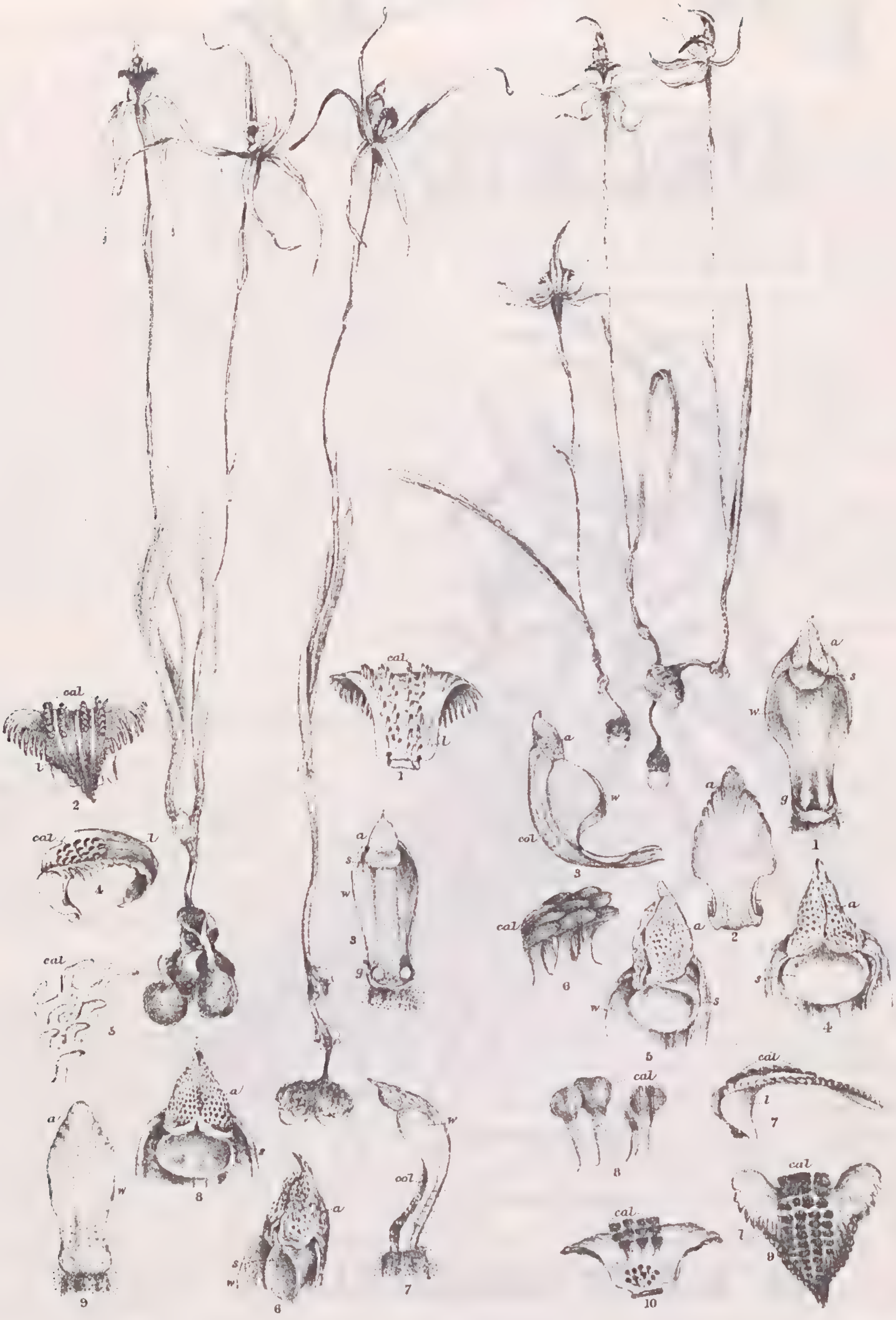
PART 2.

AUSTRALIAN ORCHIDS

Sarcochilus Divitiflorus.

BY R. D. FITZGERALD F.L.S.

SYDNEY, N.S.W.
Printed by Thomas Richards, Government Printer.



From Nature and on Stone by R.D. FitzGerald F.L.S.

Clavigera CALADENIA Tessellata

Sydney, N.S.W. Thomas Richards, Government Printer.

Caladenia clavigera *(A. Cunningham)*. Caladenia tesselata *(Fitzgerald)*.

To one of the forms of *Caladenia* figured I have attached the name of *Clavigera*, not only because it sufficiently agrees with the descriptions given of that species, but on account of the locality from which it has been received, though it can hardly be reconciled with the figure of *Clavigera* as given by Hooker in his "Flora Tasmaniæ." In endeavouring to fix the identity, not only of Orchids but of the members of other families, the student will find locality (especially with reference to the Coast Range) a very great help in determining the form originally named. Thus, in this instance, the specimens from which the figure has been taken were kindly sent to me by Dr. Woolls, from near Mudgee, and near Bathurst is given as the locality where the plant to which A. Cunningham gave the name was procured.

The second form was found by me in two localities at Hunter's Hill, near Sydney, and as it differs in several respects from the inland form or species, I have given to it the name of *tesselata*, from a portion of the labellum being paved, as it were, by the close packed calli.

Where the species is the same, the flowering is always later on the western side of the Blue Mountains than on the coast, generally by a month or two. So far as I am acquainted with the time of flowering of *C. clavigera* and *C. tesselata*, the order is reversed; specimens of the former having been obtained in the end of August, and of the latter in the beginning of October.

C. tesselata grows in sandy, swampy ground, under the shade of "tea-trees," (*Kunzea.*) It very rarely produces two flowers. On examination of a plant of this species as it grew, the pollen was found to be drawn down out of the anther, and attached to the centre of the stigma by a little group of the chaffy scales of some plant, which helped to form a cocoon. This cocoon belonged, in the opinion of Mr. Patrick McKay, to a dipterous insect, and the flower must have been fertilised by the efforts of the inmate to get rid of its covering. A method of fertilisation that may frequently occur, as the dorsal sepal presents a suitable shelter for an insect about to undergo a change, but a method that would hardly be conjectured if not observed.

The principal distinctions between the species are as follow :—

C. clavigera.	*C. tesselata.*
Flower three inches in diameter.	Flower one and a half to two inches in diameter. Whole plant generally smaller and slighter.
Sepals contracted for a third of their length, and clavate at the ends.	Sepals not contracted, and not clavate.
Column but slightly curved.	Column very sharply curved.
Anther markedly mucronate.	Anther very slightly mucronate.
Wings of column moderately dilated.	Wings of the column near the anther considerably dilated.
Labellum recurved.	Labellum flatter, not recurved.
Half the labellum towards the point naked, with the exception of faint raised lines corresponding to the spaces between the rows of calli.	Same portion of labellum covered with close set calli, in four rows.
Half the labellum to its base traversed by four rows of slender distinct bent calli.	Same portion of labellum, for half its length, bearing four rows of thick, close-set, bent calli, and at the base a group of upright clavate calli.
Glands at the base of column globular.	Glands at the base of column oval.
Leaf broad.	Leaf narrow.

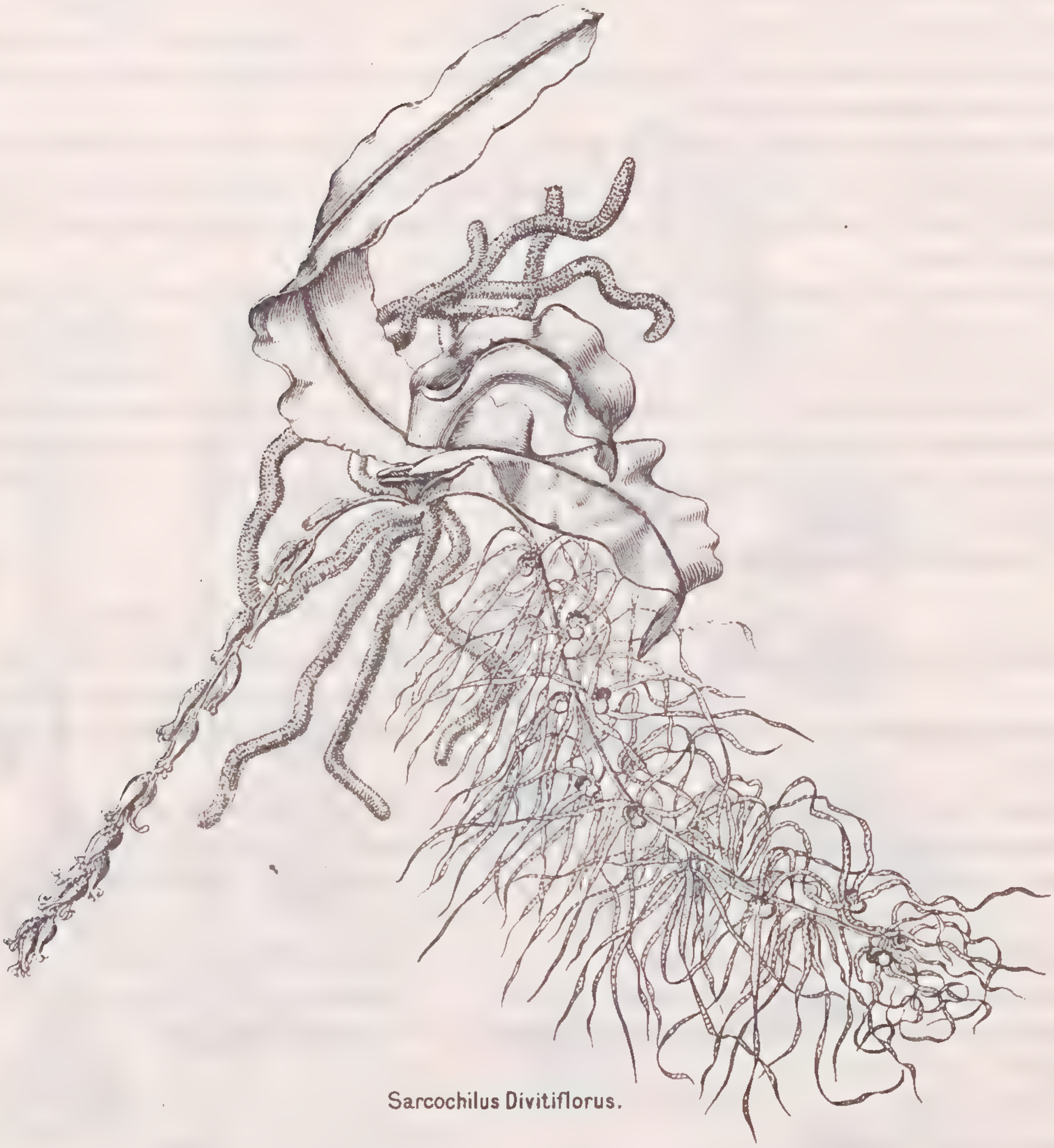
EXPLANATION OF PLATE.

Caladenia clavigera. Fig. 1. Labellum, from the back. 2. Labellum, from the front. 3. Column, from the front. 4. Labellum, from the side. 5. Calli of the labellum. 6. Side view of top of column, pollen masses and one wing removed. 7. Column, from the side. 8. Front view of top of column. 9. Column, from the back.

Caladenia tesselata. Figs. 1, 2, and 3. Column, from the front, back, and side. 4. Front view of top of column. 5. Side view of top of column, pollen masses and one wing removed. 6. Calli on centre of labellum. 7. Labellum, from the side. 8. Calli on base of labellum. 9. Labellum, from the front. 10. Labellum, from the back.

PART 2.

AUSTRALIAN ORCHIDS



Sarcochilus Divitiflorus.

BY R. D. FITZGERALD F.L.S.

SYDNEY, N.S.W.
Printed by Thomas Richards, Government Printer.

Footnote On The Unpublished Drawings In The Mitchell Library. cont.

Dendrobium. Perhaps a North Queensland or New Guinea species?

J.J. Betts

ROSA FIVEASH'S "AUSTRALIAN ORCHIDS" - A BOOK REVIEW.

Stephen Clemesha

Already a number of books on Australian orchids have been published and these more than cover the species, with the exception of a few cases.

This book with Rosa Fiveash's original paintings all published, and with text by Mr. Noel Lothian, the Director of the Adelaide Botanic Garden, is of value from the historical angle as Rosa Fiveash was one of the best known botanical artists of her time, and her work often accompanied Roger's descriptions.

As this work is principally an historical work, it is unfortunate that more about Rosa Fiveash is not included and still more, that the little included is only contained on the inside of the dust jacket.

The plates in this book have been printed well and in all but two or three cases, represent the species they illustrate very well. Flower dissections are shown and they are of the same high standard as the complete drawings.

The orchids illustrated on the 99 plates are a selection of those from all over Australia, but as would be expected there is an emphasis on South Australian species, with few from North Queensland and areas far from S.A. A few rarely illustrated South Australian endemic species are shown.

As R.C. Fiveash lived between 1854 & 1938 and left no text with her paintings, this work was done by Mr. Lothian. The descriptions are useful and brief habitat details are given as well as the overall distribution. The descriptions are easy to follow, containing only the most elementary botanical terms.

Unfortunately the text of the book does not appear to have been checked by an orchid specialist prior to publication and a sprinkling of errors can be found through the book. These inclued a few incorrectly labelled plates, spelling mistakes which are repeated in several places and some plants are described under a name which is no longer valid. There are also a number of factual errors in distribution and points about the plants. Further, some points are clumsily or ambiguously expressed.

These errors do not spoil the book to any important degree, but their presence is regretable in a text which otherwise is of a high standard.

Publishers who are in a hurry to get books onto the market often cause these annoyances and if this is not the case, then the fault must lie with the author. Most of the more recently published orchid books have suffered from this problem and many to a much greater degree.

Rosa Fiveash's book is published by Rigby and retails for $19.50, quite high for a book which does not cover the complete orchid flora of any given region. The book will have most appeal to botanists familiar with Fiveash's work, however some will baulk at the price.

Rosa Fiveash's "Australian Orchids" by Rigby. 11" x 8½", hard linen covered. 150 pages. 99 colour plates, some with numerous species represented. 1974. National Library of Australia card number ISBN 0 85179 615 x.

Stephen Clemesha

Orchids Common To North Queensland & South Eastern Australia. cont. from Vol. 5. No. 1.

In the tropics it is known only from a few places in the highlands and more surprisingly, from Dunk Island, near sea level. It flowers in late autumn and early winter, as does the preceeding species. Unlike it however, only one form is known.

The genus Corybas is fairly clearly, one of asiatic origin as most species are found in the islands north of Australia and mountain districts of tropical Asia. In tropical Australia only 3 species are found, all are confined to highland areas where the climate is superficially similar, temperature wise, to more southern areas.

The genus is much better represented in the southern parts of Australia, where 12 species (including 3 so far undescribed) are found. Most of these are plentiful and widespread. The genus is well represented in New Zealand. Consequently this genus appears to have reached Australia from Asia, but has achieved its best development in the south, where there are larger areas with cool temperatures.

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Orchids Common To North Queensland & South Eastern Australia. cont.

Cryptostylis subulata (Labill.) Reichb.f. Also belongs to a genus which clearly is of Asiatic origin which has reached its best development in southern Australia and is not well represented in the tropics, though at least one species grows in lowland tropical forests (C. arachnites (Bl.) Hassk. of Java, Sumatra and Malaya). In north Queensland C. subulata appears to be limited to the south eastern part of the well watered mountainous region of north Queensland i.e. the Seaview - Paluma Range. In south eastern Australia C. subulata is very widespread and plentiful in a wide range of habitats (greater than the other 3 species. Its distribution exceeds and completely includes that of C. erecta and C. hunterana and is almost true of C. leptochila, which extends a little further inland. The Western Australian C. ovata appears to be very closely related to C. subulata and to have changed in a number of ways to survive in a climate with a hot, dry summer. The presence of C. subulata in the tropics is most probably a result of its tolerance of a wide range of habitats. However, it has only a limited distribution in the tropics, showing that it generally is better suited to cool regions.

Cymbidium madidum Lindl. This Cymbidium occurs from the tip of Cape York Peninsula to south of Coffs Harbour N.S.W. It inhabits rainforests or mangrove swamps.

In north Queensland the species shows considerable variation. The var. leroyi (St. Cloud) Menninger, has a labellum in which the margins of the front lobe are upturned, while the var. madidum varies from dark brownish to golden green. In south Queensland and northern N.S.W. only the dark brownish form of the var. madidum appears to be present. The var. leroyi is absent and so too is the golden green form of var. madidum (which is the most attractive form.) I have not seen enough southern plants to be sure the last mentioned is entirely absent, but if not, then it certainly is much rarer than in the tropics.

In cultivation in Sydney I have found all plants regardless of variety or form, or place of origin behave equally. All grow well and seem to take two years for each pseudobulb to mature, whereas, in the tropics, this would accur in one year. Consequently this species lacks the cold tolerant and cold intolerant races which occur in C. canaliculatum. Even plants from mangrove swamps near Cairns grow well in Sydney.

Cymbidium suave R.Br. Also is widespread in eastern Australia. It extends from near the Victorian border (Merimbula) to near Cooktown in north Queensland. It generally has a slightly more southern distribution than the other 2 Australian species since the northern and southern limits are several hundred miles south of that of the other species. I have not seen any plants from the tropics , so I am in no position to compare them, I have been told that in the tropics this species is mainly confined to the highlands. This suggests it is a plant preferring cooler temperatures than occur on the north Queensland coast.

Dendrobium gracilicaule F.Muell. This species is plentiful in northern N.S.W. and southern Queensland, in lowland and mountain forests. In north Queensland it only grows at higher altitudes. Clearly it requires cooler temperatures. Northern forms generally have more robust stems. I know of no difference in the flowers. Like Chiloglottis, Corybas, Cryptostylis and most other orchids common to north Queensland and south-eastern Australia, it is absent from the large dry area of central Queensland.

Dendrobium monophyllum F. Muell. This species, like D. gracilicaule is confined to the highlands in the tropics but coastal in northern N.S.W. and south Queensland. It is reported to be more abundent in its southern distribution. The dry, low region of central Queensland has formed a large gap in the two populations, but no differences between them, has so far, been detected, although tropical plants tend to be more robust. However, it has not been established whether this is genetics or purely environmental.

Dipodium hamiltonianum F.M. Bail. A species distributed from the tip of Cape York Peninsula to the north of Victoria. It is generally uncommon over most of its range. In N.S.W. and Victoria it is a species of inland regions though it does reach the coast near Newcastle. It grows in open woodlands and avoids rain forests and it reaches the coast in some dry parts of Queensland. Because of its being able to survive in dry regions,it would be capable of penetrating dry central Queensland to a greater degree than most species. I know of no differences between tropical and southern races. It resembles D. punctatum in habit, but grows only in a part of D. punctatum distribution and tends to flower later, has larger flowers which differ from those of D. punctatum in several important points. Further-more hybrids between the 2 appear to be absent. The distribution of this orchid suggests it prefers dryer conditions than D. punctatum. The structure of the flowers of all species of Dipodium are very similar and in the non saprophytic tropical species, leaf and stem differences are of assistance in separating them. In the saprophytic species the foliage is

continued Vol. 5. No. 3.

Orchids Common To North Queensland & South Eastern Australia. cont.

reduced to scales. Some have suggested that D. hamiltonianum should be treated as a variety of D. punctatum, this, I feel, would be an error.

Diuris aurea Sm. The genus Diuris is one of the larger terrestrial genera of Australia. Unlike most other large genera it is almost completely confined to Australia (except for — D. fryana of Timor). No species are found in New Zealand, New Caledonia or New Guinea, though the related Orthoceras strictum extends to New Zealand. Diuris aurea has a more north eastern distribution in N.S.W. and Queensland than most Diuris. It extends to south of Moruya in N.S.W. and is one of the more common Diuris species of coastal N.S.W. and southern Queensland. At least two forms occur. That near Sydney and in other southern localities is tall and the flowers tend to be larger and more attractive. On the north coast of N.S.W. (Coffs Harbour) plants tend to be shorter and bear less attractive flowers. Plants from the respective areas retain their differences in cultivation. It is not known how widespread the short form is, nor is it known which form is found in north Queensland. Hence the species is not common and has only been found on the Palluma Range and some ridges near the Atherton Tablelands. In the tropics it flowers in April and May, but other orchids common to north Queensland and south eastern Australia which are April and May flowering in the tropics and which are spring flowering in the south, revert to spring flowering if transferred (in cultivation) to Sydney.

Diuris punctata Sm. This species was a common Diuris in Australia prior to settlement, however many of its habitats have been turned to farm land. Although it is extremely variable and each population of the species may be a little different to another and great variation occurrrs within each population, the variation has fallen into a pattern making the separation into varieties quite satisfactory. The common form of D. punctata i.e. D. punctata var. punctata forma blakneyae, extends from western Victoria (formerly S.A. where now probably extinct) through N.S.W. to southern Queensland. In north Queensland it is uncommon and found only in a few mountain areas. In south eastern Australia it is always spring flowering, but in the tropics it flowers mainly from March to May and occasionally in the spring.

D. punctata var. alba (R.Br.) Dockrill. The species occurs from Sydney northwards and is chiefly coastal in distribution . It extends as far north as Rockhampton before conditions become too tropical and dry for it, however it occurs too, on the Atherton Tableland where the climate is cool enough for it. Here again, is an example of an orchid with a north eastern distribution in N.S.W. and south Queensland reaching the Atherton Tableland, whereas other widespread and common species such as D. maculata do not. Other orchids found with this north eastern plant are Acianthus fornicatus, A. amplexicaulis and Caladenia carnea var. gigantea.These all have a distribution more north eastern than related species or varieties.

D. punctata var. parvipetala Dockrill. This variety of D. punctata grows in areas well away from the coast. Like the var. alba, it grows near (west of) Rockhampton in an area with a lower rainfall than suits many orchids. The variety occurs in parts of the Atherton Tableland and also in southern Queensland where it extends to about the N.S.W. border. In N.S.W. and Victoria it is replaced by the similar, but larger D. punctata var. longissima which is also chiefly a variety of inland areas. Like all the varieties of D. punctata that extend to tropical Queensland, there appears to be no marked difference outside the normal great variation within the species, between tropical and southern populations. The tropical populations of D. punctata and D. aurea appear to be present in north Queensland, only because of the cool elevated areas. They all appear to be migrants from the south.

Galeola foliata (F. Muell.) F. Muell. A saprophyte closely related to the non saprophytic Vanilla. It carries much more chlorophyll than the average saprophyte, but its rate of growth is more rapid than that of a non saprophytic orchid. It is a fairly common plant in rain forests of north Queensland (coast & highland(. Now rather rare in northern N.S.W. and south Queensland, though it was more common prior to extensive settlement and consequent land clearing. No difference between northern and southern races has been detected. The genus extends to Japan, Asia, and contains about seventy species. A second species occurs in Australia and is confined to southern Queensland and N.S.W. This is a rather unusual development of a tropical Asian genus, though present to a greater degree in Corybas and Cryptostylis.

Geodorum pictum (R.Br.) Ldl. An orchid common in some parts of north Queensland where it grows from sea level to the highlands. It also occurs in New Guinea. In N.S.W. it extends south to the Macleay River. Within N.S.W. and south Queensland it is a lowland plant, generally less plentiful and in a more restricted range of habitats.

continued p.20.

SEED FLASKING SERVICE.

A.N.O.S. Council has now confirmed arrangements for its subsidised flasking service to members. The following conditions will apply=

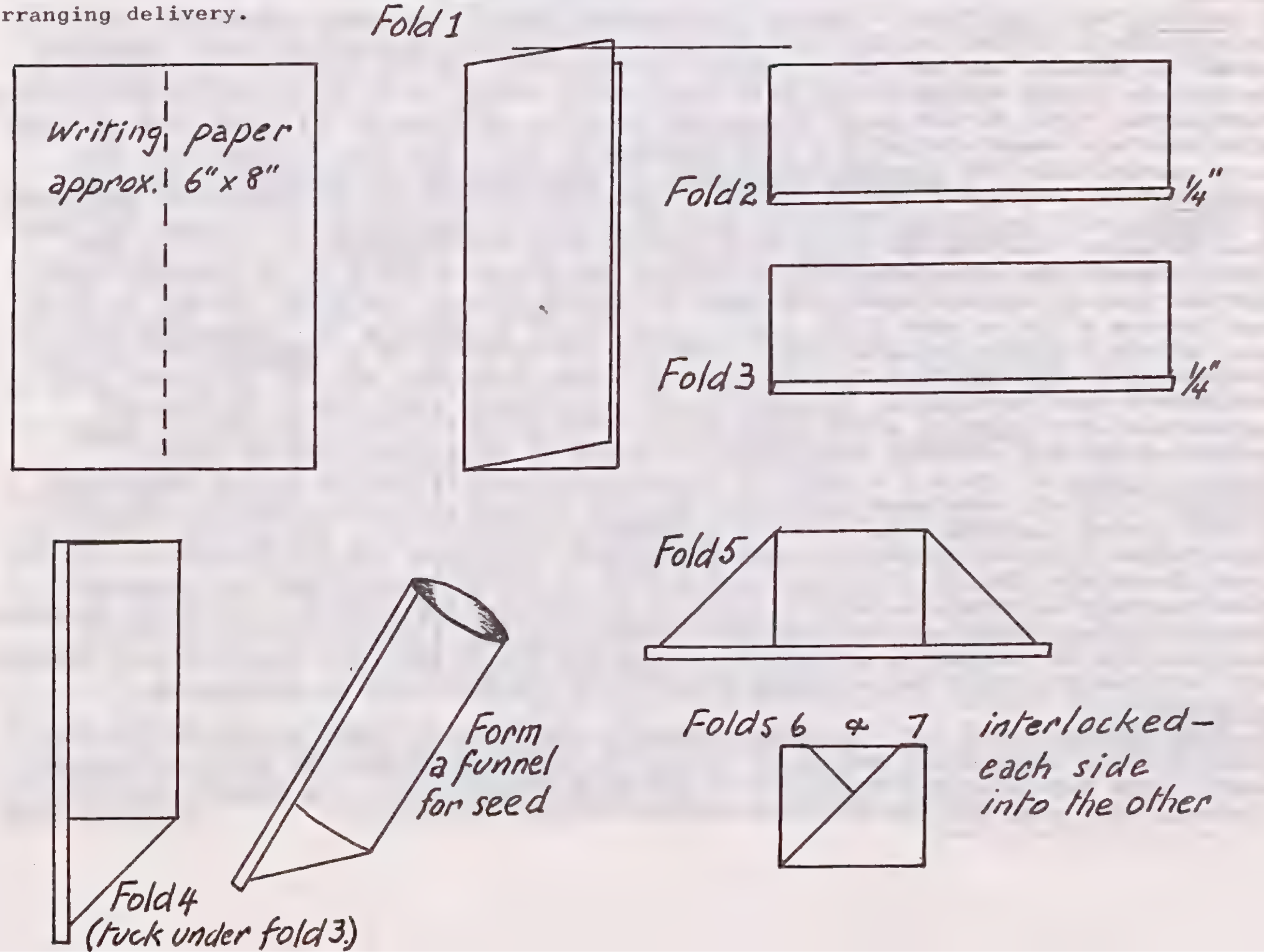
1. Financial members of A.N.O.S. may have their native orchid seed (species) flasked by experienced technicians selected by the Society.
2. The cost of this service will be subsidised by A.N.O.S. to the extent of 50% of charges (at present $4 for the initial flasking and $4 for each replated flask).
3. In the event that seed is not fertile or, for some other reason there is no germination, thefee will be refunded - less $3 to cover the work involved in putting down the initial mother flasks.
4. In sending seed to A.N.O.S., members should follow the procedure indicated below, making sure to label the package with: owners name and address
name of species
date of pollination, if available and date of harvesting
number of replated flasks required
5. A.N.O.S. reserves the right to limit the flasks of any one species to such a number as it may determine from time to time, and to retain any surplus seed for conservation purposes. This limitation must be imposed to ensure that no commercial operators take advantage of the Society to achieve financial profit.
6. Packaging procedure. Do NOT wrap either green pods, or dry seed in plastic material - which causes sweating.

Green pods should be taken at 2/3 rds the normal ripening time and wrapped in writing paper, then packed in a slide box or similar container, padded with cotton wool.

Dry seed. Remove seed from pod and pour into a phial made from writing paper (see illustration). Do NOT use tissue paper as the fine seed will become embedded and lost in the tissue.

Address the package to the Secretary, A.N.O.S., P.O. Box C106, Clarence Street, 2000, with your cheque. If posting from outside Australia, use airmail service.

7. A.NO.S. will inform you when the replated flasks are available and what to do about arranging delivery.



THE ORCHADIAN

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Dedicated to the study and conservation of Australasian indigenous orchids.

COUNCIL

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Registered for posting as a periodical - Category B.

MEMBERSHIP FEE 1976 - 1977.

Members will be pleased to learn that our fee, which falls due on 1st July 1976, will not be increased in spite of rising costs. In maintaining the fee at $4.00 we shall have to achieve as many savings as possible where postage is concerned. No doubt members will wish to do likewise. We suggest, therfore, that if you intend buying a membership badge (as described on pp. 23 & 26) you combine the $2 payment with your annual subscription and let us have just one cheque for $6.00. If you do this now, you will, of course, save a stamp and a cheque while at the same time assisting the Society's budget for the coming financial year.

FINANCIAL STATEMENT.

Our Financial Statement for 1974 - 75 has not been included within this issue. Due to the importance of several of the articles included, it was decided at a very late stage of production, to delete this material from this issue. It will be included in the June 1976 issue of The Orchadian.

NATIVE ORCHIDS OF TAIWAN.

This new work, by Horng-Jye Su, M.S. is one which, normally would not fall within the ambit of this journal. However, as many of the orchids represented within the work are either endemic to both countries, or have species within the same genus, in each country, we have included a brief note. The book includes 52 colour plates together with innumerable monochromatic plates. The colour plates in particular are generally of a very high standard, and in my copy, printed in register. For the linguists the author has included descriptions in both English and Chinese! pp. 204, 52 col. plates, 86 b & w and monochromatic plates, 7¼" x 7", colour printed cover and dust jacket. October 1, 1975. Published by Harvest Farm Magazine 27, Lane 106, I-Tung St. Taipei, Taiwan, Republic of China. My copy $5.00 from The North Shore Orchid Society.

MEMBERSHIP RENEWAL.

Due to the increased size of this issue and its consequent cost, which we hope will continue in all future issues, your Council has reluctantly decided that tardy membership renewals will have to cease. Renewals not paid within 2 months of the due date will result in deletion from the mailing list until the fee is paid. If you have any doubts, check your last receipt or contact the Treasurer at our post box now!

A MESSAGE FROM THE PRESIDENT - ON OBJECTIVES.

With A.N.O.S. in its 14th year of dedication to the study and care of Australasian orchids I find myself honoured indeed to take up the role of President. All my predecessors (Bill Murdoch 1963 - 1966, Eric Gordon 1966 - 1969 and 1974 - 1975, R.G. Napier 1969 - 1972 and Bob Lowe 1972 - 1974) have been especially distinguished in this field - far more so than I. It is good, therefore, to have two of them - Eric Gordon and Bob Lowe - still serving on the A.N.O.S. Council. It is also good to have the continuing support of Eric Marygold as Treasurer and Murray Corrigan, as Editor. Since the inauguration of the Society and the first issue of The Orchadian in August 1963, Murray has attended almost every Council meeting and well deserves the honour of Life Membership, to which he was elected by Council at the Annual General Meeting last November. Lloyd Bradford, President of the Sydney Group of A.N.O.S. continues as Vice President.

With the support of these experienced Councillors I look forward confidently to the future of A.N.O.S. in 1976 and beyond. This confidence is shared by Norm Hilliger our new Secretary, and by two quite new young Councillors: Keith Edwards (who is Secretary of the Blue Mountains and District Orchid Society) and Peter Vaughan, Secretary of the Sydney Group of A.N.O.S.

There is something about growing orchids that makes the grower a willing slave to them and *keeps* him in thrall; and that fact has influenced me, as a theme, in this note on our objectives. I belive that A.N.O.S. must not rely entirely on the enthralling nature of our orchids to keep us together as a Society. We must all contribute something ourselves. Those members who are isolated, in the sense that they live away from the cities and do not have local groups to attend each month, may in fact be the majority of our members. In any case they get their satisfaction from A.N.O.S. and communication with fellow enthusiasts solely through the Society's journal. So our main objective is better communication through the pages of The Orchadian. Our Editor plans that it will enthral you, just as your orchids do. So you will get it regularly each quarter during 1976 and, if our plans go well, and postal charges permit, the number of issues should be increased to six during 1977.

We should like to see more about the Groups in our journal; so we shall be looking more closely at the regular monthly bulletins from the Groups. When they publish particularly good material we shall give it a wider audience by either reviewing or publishing it in The Orchadian. It is not intended to publish material of purely social and local significance - or the racy gossip and personality stuff. The Orchadian has, in the past, tried to maintain a consistently high standard of scientific botanical material and this will continue. In a field where there is so much original work to be done, The Orchadian must continue to be the most authoritative vehicle for information to members. It must continue as the voice of discovery, analysis and review; so that isolated devotees (or addicts?) will not be able to do without it.

For the Groups we have something new to offer. When a Group achieves 100% of its members subscribing to The Orchadian, we shall recognise this by making an appropriate contribution to the funds of that Group.

Groups that are especially strong in the cultivation of certain native orchid genera or species may wish to develop plant swapping arrangements or information exchanges with groups in other places; for example people in predominantly terrestrial areas may wish to contact people in predominantly epiphytal areas. We shall publicise your suggestions.

Finally, a word about the scope of the term "native orchids". There are some members who would have us confine our interest to species and exclude altogether the cultivation of man-made hybrids. Some would permit the benching of exotic species while excluding the beautiful hybrid "creations" such as *Dendrobium* Ellen, *D*. Peter and *D*. Bardo Rose. You may find *D*. X *delicatum*, *D*. X *suffusum*, *D*. X *gracillimum* or *D*. X *grimesii* in the bush and you may grow them in your collection, but you must not bench them or discuss them at A.N.O.S. gatherings! If we were to become a species society this could appear logical; but then, in order to take in exotic species, we should surely have to change our name. I want to make my own position clear on this issue. Like most other members I grow exotic orchids (both species and hybrids) as well as native orchids. In both cases I *tend* to prefer the species; but not always. Scientifically, the study of hybrids cannot be ignored. Hybridisation occurs in nature and species are not necessarily stable. The botanical "purists" among us would do well to read "Amateur, Orchids and Botany" by Rex J. Van Delden in the "Orchid Digest" for November - December, 1975, p.211. I shall quote only the final paragraph: "We have to learn to accept the fact that '*species*'are developing and that '*species*' do disappear; evolution is not an entity but a process. A true *species*, if duly identified

continued p. 23.

A Message From The President - On Objectives. cont.

deserves a name; what is in a name - but recognition?"
Three very interesting articles appearing in recent issues of the "Australian Orchid Review" by J.N. Rentoul (A.O.R. March and June 1975) N.C. Jupp and G.C. Morrison (A.O.R. December 1975) speculate upon the speciation and dispersal of Dendrobium speciosum. These articles are well worthy of our attention generally, but for the purpose of my present argument Rentoul's problem of accounting for the red colouration of the pseudobulbs of one form of D. speciosum might well be considered by those who insist that A.N.O.S. should eschew the subject of hybrids. It is by observing the results of hybridisation (as Noel Jupp has done) that we can learn more about our species.
The late Ira Butler saw hybrids as a means to preserve our species in the wild. By concentrating their attention on hybrids, orchid lovers would perhaps leave the species to survive in the bush and the rainforests. The Ira Butler memorial trophies, fostered by A.N.O.S., attest to this. My own position is: that the study and cultivation of native orchid hybrids is not merely desirable; it is worthy of deliberate fostering by A.N.O.S. and, as an earnest attestation of this, your Council has agreed to extend the A.N.O.S. flasking service (as described in The Orchadian for December 1975) to cover AUSTRALASIAN NATIVE HYBRIDS as well as species.

J.J. Betts

A WONDERFUL SCIENTIFIC CONTRIBUTION.

At the February meeting of A.N.O.S. Warringah Group, members were entranced by a lecture on Rudolf Schlechter's New Guinea and its orchids, by that creative orchidophile, Hermon Slade. Returning to Sydney for one of his all too brief visits, he was persuaded to speak by Eric Gordon.
It was an historic occasion as well, Hermon having been our first speaker at the inaugural Group meeting of A.N.O.S.
He delighted his audience with his reading of Schlechter's Foreword, from Die Orchideen von Deutsch Neu-Guinea, and augmented Schlechter's remarks on New Guinea with his own observations over many years. Fortunately we had some brief notice of Hermon's talk and borrowed a tape recorder for the occasion. In our next issue we hope to be able to share his words with all members.
At the conclusion of his talk, Hermon presented a cheque for $100 to Norm Hilliger, President of Warringah Group and Hon. Secretary of A.N.O.S. for the Society to finance the commencement of translation from the German, of the foreword to Die Orchideen von Deutsch Neu-Guinea. This will enable members of the Society to enjoy this great orchidologists feelings for New Guinea. It was further indicated that should the initial task be completed successfully, more assistance might be forthcoming for the continued translation of this great work.
An exciting and visionary step forward !

Editor

NOTES FROM THE SECRETARY.

Norm Hilliger

It is requested that in future all correspondence, or articles for The Orchadian, be addressed to the Secretary at our Society post box. Articles for use in The Orchadian will be acknowledged by return mail, before being passed to the Editor.
Where possible letters will be answered immediately or, if of a contentious nature, will be held over till next Council meeting.
Society Badge. As members have already been advised, a badge for the Society has been designed. The orchid selected for representation is Thelymitra ixioides on a white background, with the words 'Australasian Native Orchid Society' around the circumference. It will be circular, approximately 2 cm. in diameter, with pin, joint and safety catch.
An initial order for 200 has been placed and they are now available to members. Place your order, together with payment, as soon as possible. Please remember to include your name and address if posting in your order!
Cost: Australia $2.00, other than Australia $2.50.

Norman Hilliger

A NEW ORCHID FOR AUSTRALIA

Sarcochilus *brevirhachis* W.T. Upton sp. nov.

W.T. Upton

Herba epiphytica pendula; *caules* 1 cm. vel paulo longiores; *folia* 4 oblonga - ovata, falcata leviter 5 cm. longa 17 mm. lata, supra atroviridia usque ad purpurascentia, subtus purpurata. *Racemus* pendulus; rhachis pedunculo multo brevior; *flores* 6 fugaces aperientes duo simul intervallis circiter 21 dierum interpositis. Tepala alba oblonga-ovata, concava, fere paris longitudinis circa 1 cm. longistrorsum; petala 3 - 4 mm. lata; sepala 4 - 5 cm. lata; sepalo dorsali arcuato super columna; 1 - 2 maculis luteolis pallentibus basi sepalorum lateralium. *Labellum* 4 - 5 mm. longum; lobis lateralibus 3 - 4 mm. longis, 2 mm. latis, obtusis fronte retrocurvata ostendenti maculas purpuratas usque ad porphyreas, transtris porphyreis disiunctis duabus areis ovalibus luteolis; callus distalis parum prominens et vix sulcatus longistrorsum; callus proximalis post orificium calcaris videtur velut iugum iunctura loborum laterum velutque margo superior orificii; duo tumores maxime exigui in dimidio proximalis parietis orificii; intermedius lobus luteolus ± erectus, obtusus, angustus, carnosus, pilis numerosis eburneis; calcar minime evolutum, album cum maculis magnis purpuratis in centro antico maculis purpuratis dilutissimis sub calcari. *Columna* 3 - 4 mm. longa pede columnae 1.5 - 2 mm. longo apice hispido. Stigma ovale-rotundum. Rostellum prorsus exstans, acutum, 0.5 cm. longum. Anthera latior quam longa; rostro obtuso. Pollinia 4 paribus duobos arte appressis singulis disparibus; stipes superans pollinia longitudine.

Pendulous epiphyte. Stems from 1 cm. long. Leaves four, oblong to ovate, slightly falcate, 5 cm. long by 17 mm. wide, dark green to purplish, underside purple. Raceme pendulous, rhachis much shorter than peduncle. Flowers six, fugacious, opening two at a time with approximately three weeks between each pair opening. Sepals and petals white, oblong-ovate, concave, almost equal in length, approx. 1 cm. Petals 3 - 4 mm. wide, sepals 4 - 5 mm. wide, dorsal sepal arching over column, one or two pale yellow markings at base of lateral sepals. Labellum 4 - 5 mm. long; lateral lobes 3 - 4 mm. long x 2 mm. wide, obtuse, the front folding back to display the purple to red-brown markings, the transverse bars being red-brown, separated by two flat oval yellow areas; the distal callus not very pronounced and only slightly grooved longitudinally; the proximal callus at the rear of the orifice of the spur appears as a ridge joining the side lobes and as the upper border to the orifice; there are two very slight swellings half way down the proximal wall of the orifice; mid-lobe yellow, more or less erect, obtuse, narrow, fleshy, with numerous cream hairs; spur not well developed, white with large purple markings in front centre, very faint purple markings beneath spur. Column 3 - 4 mm. long, column foot 1.5 - 2 mm. long, hispid at apex. Stigma oval to round. Rostellum projected forward, acute 0.5 mm. long. Anther broader than long, rostrum obtuse. Pollinia 4, in two closely appressed pairs, members of a pair unequal, stipe longer than the pollinium.
Flowering period - December - January.
Holotype - Mount Lewis, south-west of Mossman, North Queensland. R. Karnaghan, 3 - 1971.NSW.
Collected at approximately 4000 feet altitude, growing in association with *Sarcochilus olivaceus* and *Cadetia* *taylori*. Most of the plants collected were on fallen timber as the plants were growing on the topmost branches of the trees.
The plant as drawn was forwarded to Philip Spence of Forestville, Sydney, in March 1971 and has flowered in December of each year since.

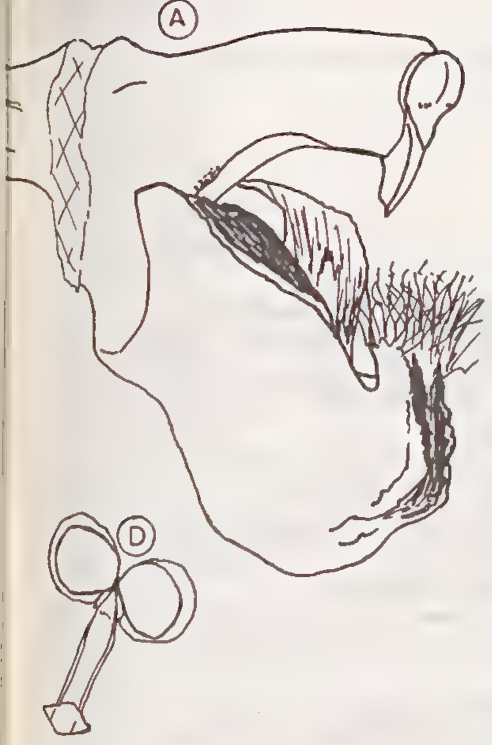
W.T. Upton, 71 Wesley Street, Elanora Heights, N.S.W. 2101.

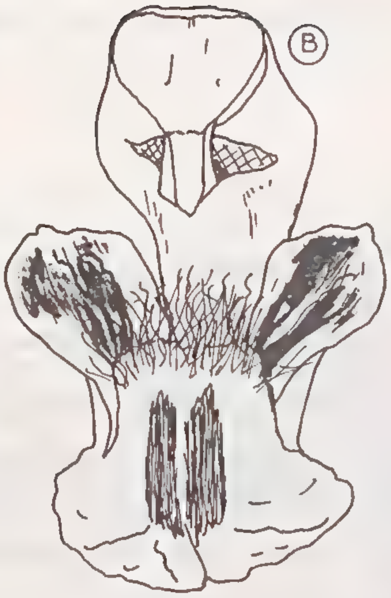
Key to drawings - *Sarcochilus* *brevirhachis* W.T. Upton sp. nov.

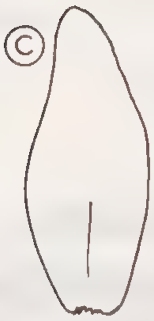
A	Column and labellum from side, segments removed	X10
B	Column and labellum from front, segments removed	X10
C	Petal	X 4
D	Pollinarium	X12
E	Lateral sepal	X 4
F	Plant	natural size
G	Looking up into column	X12
H	Dorsal sepal	X 4
I	Flower from front	X 2
J	Flower and rhachis from side	X 2
K	Longitudinal section of column	X12
L	Longitudinal section of labellum	X12
M	Anther from underneath	X12
N	Peduncle and rhachis	X 2
O	Looking down into column and labellum from front	X12
P	Looking down into labellum from rear	X12

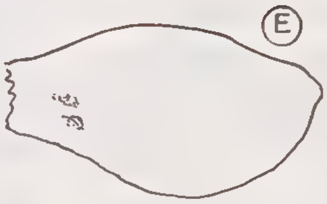
Sarcochilus brevirhachis

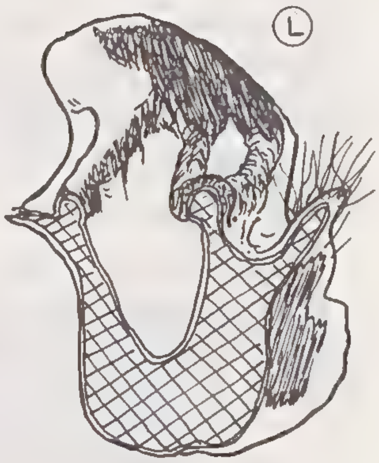
W.T. Upton sp. nov. cont

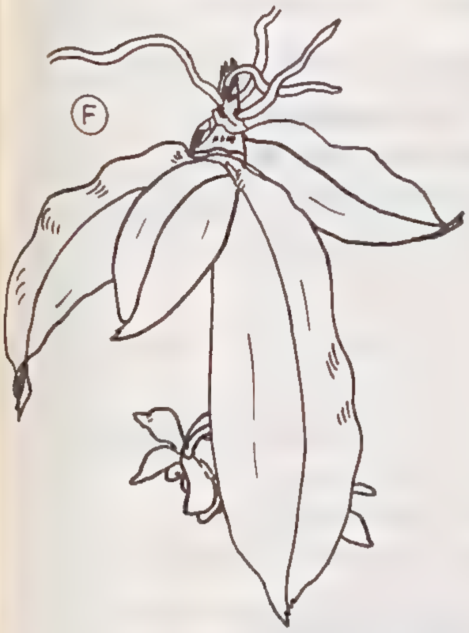


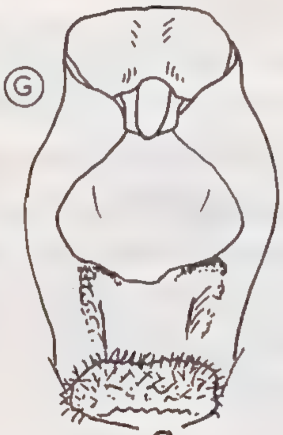


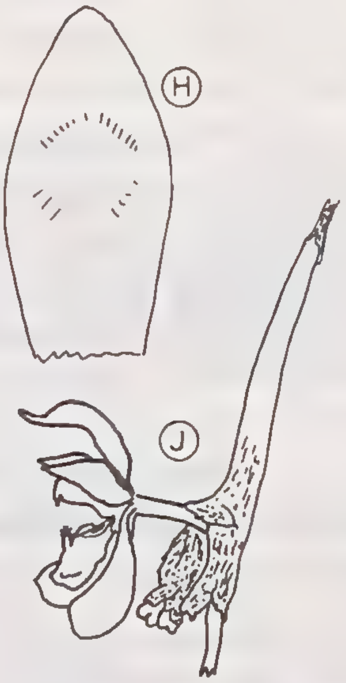


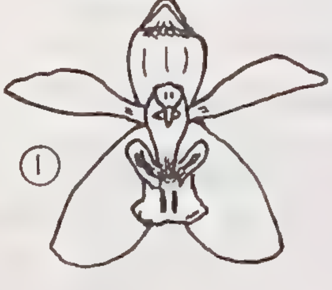


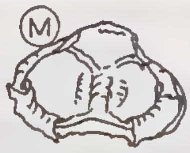


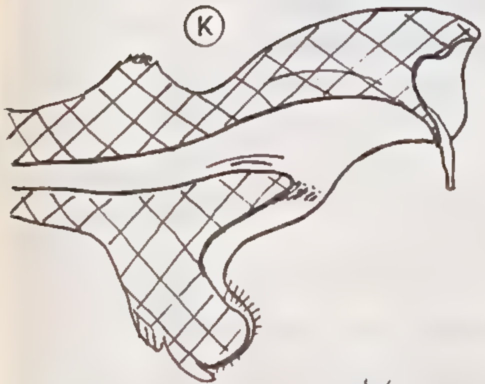


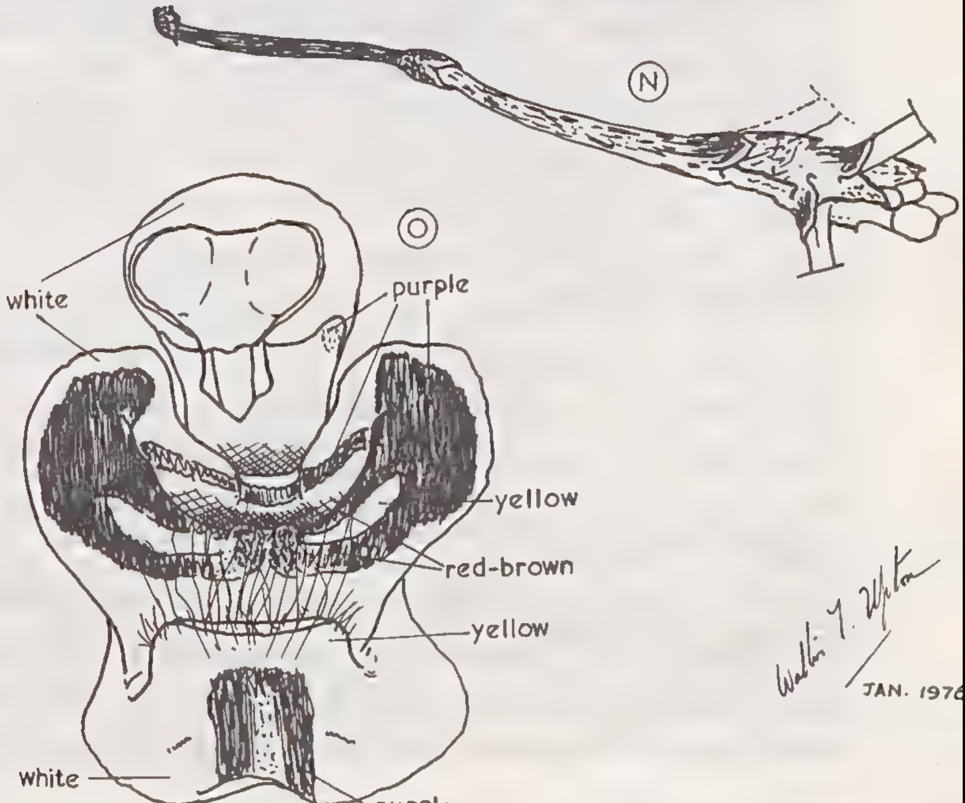




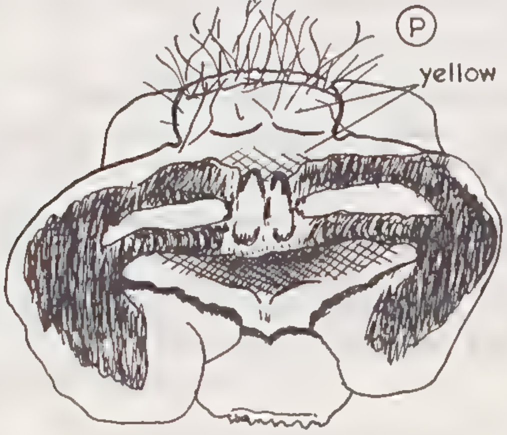








Walter T. Upton
JAN. 1976



INTRODUCING YOUR MEMBERSHIP BADGE.

Joe Betts

The selection of Thelymitra ixioides for our badge emblem is a particularly appropriate choice. First, it is truly Australasian in that it is found not only in the temperate parts of all Australian states, but also in New Zealand and New Caledonia. Second, being a blue orchid it has achieved world-wide notice. The colour and form of the flower make it ideal for the design of a small but distinctively beautiful symbol in enamel.

No doubt you will be proud to wear it for these reasons and no doubt when people ask you about the flower you will confidently say "it is Thelymitra ixioides"; but will you pronounce the species name correctly? It is not ixi-oydes but ixi-o-eyedes. Personally I believe we should not be pedantic about our use of the names of orchids. So long as we understand exactly what orchid is being talked about, that is generally enough.

However if we are to wear this badge, we ought to shoulder a little extra responsibility along with the decoration. Wearing the badge can be turned to some real advantage if it reminds you, whenever you put it on, of the following points:

- Thelymitra comes from two Greek words, thelys, meaning "feminine" and mitra, meaning "turban" (a lady's headgear if you like). It is the name of a genus. Never say "a genera", even though you may say "this is one of the many Australasian genera of terrestrial orchids" .
- ixioides means "like an Ixia". It is the name of one of the many species (plural) of the genus Thelymitra. In other words it is the name of a species (singular).

Never use the word "specie" when talking about orchids unless you are referring to the coinage you spent in buying them. If you don't believe me, consult your dictionary.

I know you have read all this about genus and species before, but the misuse goes on - even in the journals and bulletins in which you may have read it. The Orchadian to my knowledge, has never misused these terms and I trust it never will. So please try to live up to its standards whenever you wear that badge.

J.J. Betts

Orchids Common To North Queensland & South Eastern Australia. cont

S.C. Clemesha

No difference between tropical and southern plants has been observed.

In the genus Liparis two species are common to the tropics and south eastern Australia. Interestingly these are the two terrestrial species, as while epiphytic and semi-epiphytic species occur in both regions, none are common to both regions.

Liparis habenarina (F. Muell.) Benth. This species grows on open grasslands or open forest. its pseudobulbs are buried beneath the ground and like many orchids of this habit, are replaced annually. It grows from a little south of Coffs Harbour northwards. In N.S.W. and southern Queensland it is confined to the lowlands and favours swampy places. In north Queensland it is chiefly coastal, but does extend to the highlands. I do not know of any difference between southern and northern populations, other than the fact that tropical plants have been reported to be larger, in some habitats. This plant is reported to be easy to cultivate in Brisbane and Atherton, but it is very difficult to cultivate in Sydney. Probably this is the result of temperature. Consequently this plant does not appear to have gained any tolerance of cooler temperatures as it migrated southwards.

Liparis simmondsii F.M. Bail. is an inhabitant of the rain forest floor. In north Queensland it is not a common plant and is confined to the highlands. In northern N.S.W. it has only been found once to my knowledge, near Brunswick Heads and it is reported also from south Queensland. Considering that this plant grows at high altitudes in north Queensland one would expect it to have become better established in N.S.W. and southern Queensland than is the case. It can be cultivated in Sydney so temperature would not appear to be the difficulty. A number of species closely related to it occur in Asia, as far north as Japan. Some of these, especially L. nervosa of Taiwan and Japan, are plentiful in some regions. L. simmondsii appears to be a rather rare member of the group. Rupp reported it as closely allied to, but distinct from the Indomalayan L. atropurpurea Lindl. Perhaps it is a form of it, and Australia an outlying post in its distribution.

Microtis parviflora R. Br. This very insignificant orchid grows in all states of Australia, New Zealand, many western Pacific islands and at least as far north as southern China. The flowering season in the tropics is about the same as that in warmer southern habitats. In north Queensland it is fairly common on tablelands and ranges above 3000 ft. altitude. No significant differences have been observed between tropical and southern populations.

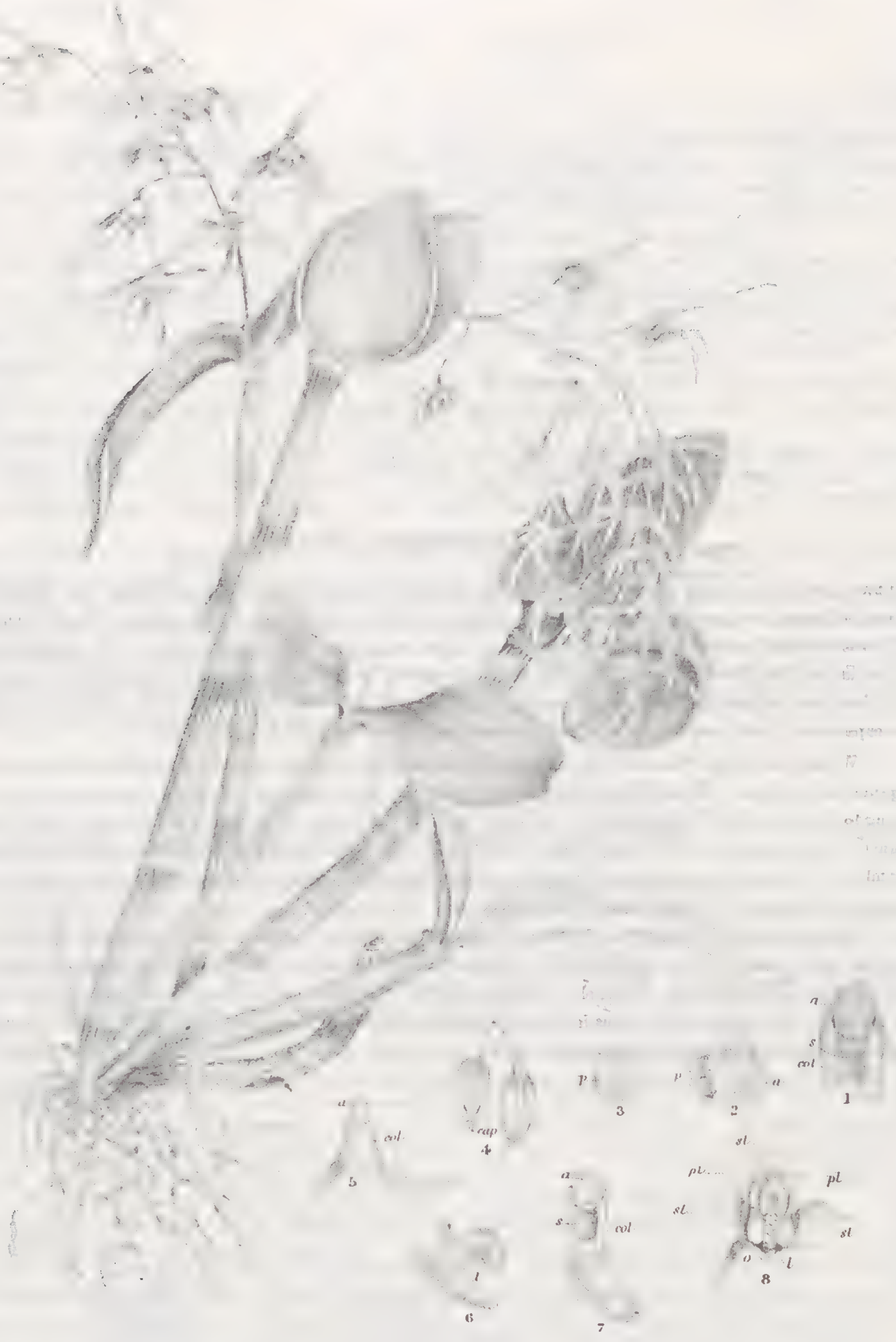
continued p. 31.

Genus Dendrobium. *(Swartz.)*

Dendrobium is the largest genus of *Epyphites* in Australia, and grows on rocks and trees. The forms of the pseudo-bulbs and leaves are very various, from the square pendent pseudo-bulbs of *D. tetragonum* to the little cucumbers of *D. cucumerinum,* and the large oblong thick leaves of *D. speciosum* to the long terete leaves of *D. teretifolium.* But various as are their forms, they are all readily fertilized, each by the pollen of any others; though in this respect, also, they show some variation of character or constitutional difference, as, though there may be no difficulty in obtaining a few capsules of hybrid seed on a spike of any species, some produce a capsule for every flower.

When found in the "brushes" or "gullies," *Dendrobiums* are very rarely observed producing more than one or two capsules on a raceme. Totally barren racemes are by far the more numerous. Yet this barrenness is by no means owing to the incapacity of producing seed, but to the fact that the stigmas of thousands of flowers are never touched by pollen. When, however, a little waxy pollen mass of its own, or of another plant or species, is placed in the stigmatic chamber, it soon appears to become incorporated with the stigma, and changing its consistency seems together with the stigma to boil up, as it were, and almost fill the chamber.

The same species, though found constantly growing on rocks in one locality, is as constantly found on trees in another, and I think a general tendency may be observed in each species to affect rocks in the southern limits of their distribution, and trees in the northern, also, to produce slighter and longer pseudo-bulbs, as the habitat is more and more to the north. The range of the genus is almost absolutely confined to the eastern slope of the Coast Range, and the general time of flowering is September and October.



From Nature and on Stone by R.D. Fitzgerald F.L.S.

DENDROBIUM Æmulum

Sydney, N.S.W. Thomas Richards, Government Printer.

Dendrobium æmulum. (*R. Brown.*)

The illustration has been taken from a fine plant obtained on the Bellingen. South of the Macleay or Hastings Rivers *D. æmulum* assumes a somewhat different form, the pseudo-bulbs being much shorter and generally thicker in proportion, and the flowers by no means so fine or numerous. This Orchid may frequently be found if properly sought for; but it is necessary to scrutinize the trunks of the lofty iron-barks (*Eucalyptus siderophloia*, &c.) amongst their highest branches, or in the mountain gullies in like manner the sassafras (*Doryphora sassafras*), and, to the north of the Hastings, the tall, red stems of the "box" (*Tristania conferta*). It certainly is not by any means well adapted to give pleasure to man, as, to admire the beauty of its flowers it would be necessary to have recourse to a telescope, and the instrument has not yet been invented by which he might enjoy the delicate odour which they occasionally emit.

This is the only Orchid, so far as I am aware, to be found habitually growing on any species of gum, *Cymbidium* not excepted, as that plant grows from the "spouts." This may in part be accounted for by the shedding of the bark in many species of Eucalyptus; but from the frequency with which Epiphytes are to be found on figs and some other trees it would appear to me that the exudations from some trees, or the rain water that rests upon them, is more congenial to Orchid life than the moisture on others. On the mangroves, for example, though so frequently placed in suitable situations, I have never found an Orchid of any kind.

D. æmulum flowers in September. It is impatient of removal to the "bush-house" or green-house, but flowers freely till it dies.

EXPLANATION OF PLATE.

Fig. 1. Front view of upper part of column, showing anther and stigma. 2. Under side of anther, pollen masses dropping out. 3. Pollen masses. 4. Seed capsules, not magnified. 5. Column, from the side, sepals, &c., removed. 6. Labellum, from the side. 7. Column, from the front, portions of sepals only left. 8. Part of flower, showing labellum, column, and portions of petals and sepals.

Genus Diuris. (*Smith.*)

This thoroughly Australian genus is in some one of its forms to be found from north to south, and is easily recognized by the pair of dependent sepals from which it takes its name, and from its projecting, rigid labellum. It is, so far as I have been able to examine it, a genus wholly dependent for its fertilisation on insects, and one that, from the compact character of its pollen masses and the readiness with which they are removed by the slightest touch to the rostellum, must frequently be fertilized by the pollen from other flowers. It is absolutely barren if kept under a bell-glass.

Though the form of the flowers generally is very distinct from those of *Thelymitra*, there is a close affinity in the stigma, rostellum, and anther to *T. ixioides*, and seed is produced by crossings between the genera. *Diuris* is not confined to peaty soil and the shade of trees, but is to be found in clay pastures and open plains. The time of flowering is spring and early summer.

Orchids Common To North Queensland & South Eastern Australia. cont.

Microtis unifolia (Forst.) Reichb.f. This plant is every bit as insignificant as M. parviflora and its distribution is the same, except that it extends even further overseas to Japan. In the tropics it too is widely distributed in the highlands and flowers at ± the same time as in warmer habitats. One can only wonder why these two so insignificant plants have been so successful within and outside Australia. Their self pollinating habit is partly the reason as there is no dependence on the distribution of an insect pollinator. This can have the reverse effect of causing a species to become very uniform and localised, but it has not, in this case.

Oberonia Lindl. Two species of this genus which extends from Japan, south to Australia and west to East Africa and east to Samoa, are common to North Queensland and northern N.S.W. No difference has been observed between northern and southern populations, but since their flowers are very tiny it would be difficult to notice, unless it was considerable.

Oberonia muelleriana Schltr. Is the more tropical of the two, it does not extend as far south (to Lismore and Byron Bay). In North Queensland it grows from coastal swamps to 3000 ft. altitude in the ranges. It extends north to New Guinea and to some Pacific Islands. The species is spring flowering in N.S.W. and Southern Queensland, but flowers in almost any month of the year in the tropics.

O. palmicola F. Muell. The species grows from about the Endeavour River in North Queensland to a little south of Coffs Harbour in N.S.W. While it extends from the coast to highlands in North Queensland, it shows a preference for the latter. In N.S.W. it is most common in the lowlands.

Peristeranthus hillii (F. Muell.) T.E. Hunt. This species, like the preceding one, does not have decidedly lopsided distribution, however no differences have been detected between northern and southern populations. This plant in North Queensland is almost confined to the highlands, while its southern distribution is chiefly coastal. It extends south to the Hastings River area.

The genus Plectorrhiza has two species, both with a decidedly lopsided distribution.

P. brevilabris (F. Muell.) Dockr. extends from the Noosa River in Southern Queensland to the McIlwraith Range in central Cape York Peninsula. It is a plant of the lowlands in the extreme south but is chiefly highland in the north. A tropical species which reaches South Queensland, but has not penetrated that state significantly.

P. tridentata (Ldl.) Dockr. A species lopsided in the opposite way. It is a very plentiful plant in parts of Southern Queensland and N.S.W. and it extends into the extreme east of Victoria. A plant of coastal and mountain rainforests. In North Queensland it is almost confined to the ranges. Plants from the tropics are generally much smaller than those from N.S.W. etc.

Prasophyllum aureoviride Rupp. One of the the more widespread species of the genus. It is known at least from near Moruya in Southern N.S.W. to Noosa in Southern Queensland. It has only been found once in the tropics, on a mountain 3000 ft. high, in heath-like country.

Unlike Diuris, Thelymitra and Prasophyllum, the common southern genus Pterostylis has become well established in North Queensland, where some endemic species and forms occur.

P. acuminata R. Br. extends from the Royal National Park, just south of Sydney to Southern Queensland, though it does not seem very common there. It is plentiful in sandy regions, including some quite near the southern extreme of its range. The species also occurs at the Paluma Seaview Range area of North Queensland and also has been recorded from New Guinea (highlands) and New Caledonia. The flowering period - late summer and autumn, is much the same in N.S.W. as in tropical Queensland. There appears to be no difference between the limited tropical population and southern populations.

P. baptistii FitzG. in the south extends from the extreme east of Victoria to South Queensland. It is not very common south of the Hawkesbury River, probably partly through climate and partly the smaller amount of open coastal swamp-land available. It grows in a few high areas on the Atherton Tableland in North Queensland. It is the most plentiful species common to North Queensland and N.S.W. that does not, as far as I know at present, involve two different forms. In the southern half of N.S.W. this species is always spring flowering and sometimes as late as November, however in Northern N.S.W. it becomes eratic and flowering is either spring or in April. As one moves into Southern Queensland the tendency is towards April flowering. In North Queensland, flowering is always around April. This species always seems to flower either in April or spring. I know of no area where it flowers in winter. While a number of species flower in autumn in the tropics and in spring in South Eastern Australia, P. baptistii is unusual in that the autumn flowering habit

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A NEW ORCHID FOR AUSTRALIA

Walter T. Upton

Malaxis marsupichila W.T. Upton sp. nov.

Surculi novelli sympodii saepe nascentes ex 1 - 2 internodiis in caule necnon ex internodio basali. *Caules* 7 - 12 cm. decrescentes, tecti bracteis vaginantibus. *Folia* 4 - 6, petiolata, petiolis canaliculatis vaginantibus e basi usque ad 20 cm. longa, 7 cm. lata viridia usque ad atrovirentia ovata, acuta; marginibus undulatis. *Inflorescentia* 17 - 59 cm. longa; flores numerosi. Siliquae in inferiore dimidio plene maturatae ultimis floribus nondum apertis; pedunculus variabilis sed frequenter multo brevior quam rhachis, bracteae 5 - 7 mm. longae et filiformae vulgo unica bractea in pedunculo; bracteae retrorsae in caulem manentes floribus iampridem mortuis. Pedicelli in medio retrorsi, pedunculus rhachisque virides purpureo-lineatae. *Flores* circiter 6 mm. trans petala; tepala purpurea diluta usque ad atropurpurea striis translucentibus; labellum atropurpureum; sepalum dorsale oblongum-ovatum convexum leviter et paulo longius sepalis lateralibus; sepala lateralia ovata-obovata, spathulata, extrorsa. Petala linearis marginibus volutis externe retrorsisque, linea singulari translucenti in medio. *Labellum* saccatum, lobus intermedius concavus; lobi laterales aliformes plicati deorsum et introrsi praeter columnam acuti. *Columna* viridis alae obtusae extensae altiores anthera; stigma non bene delineata, ovata; rostellum non facile visibile; solum clinandrii translucens; anthera non profunda; pollinia 4 paribus duobus translucentia flava.

New shoots of the sympodium frequently commencing from one or two internodes up the stem as well as the basal internode.

Stems 7 - 12 cm., tapering, covered with sheathing bracts. Leaves 4 - 6, petiolate, petioles channelled, sheathing at the base, up to 20 cm. long and 7 cm. wide, light to dark green, ovate acute, margins undulate. Inflorescence 17 - 59 cm. long. Flowers numerous. Seed pods on lower half quite mature before last flowers open. Peduncle variable but usually much shorter than rhachis, bracts 5 - 7 mm. long and fifliform, not usually more than 1 bract on the peduncle, bracts folded back and lying along stem, persitent long after flowers have died, pedicels bent backwards halfway, peduncle and rhachis green lined with purple. Flowers about 6 mm. across petals, sepals and petals pale to dark purple with translucent striations. Labellum dark purple. Dorsal sepal oblong to ovate, slightly convex and slightly longer than lateral sepals. Lateral sepals ovate to obovate, spathulate and furled outwards. Petals linear, margins furled outwards and reflexed back with a single translucent line down the centre.

Labellum saccate; midlobe rounded; sidelobes swept down past the column, wing-shaped, acute. Column green, wings obtuse extending higher than the anther. Stigma not well defined, ovate. Rostellum not readily apparent. Floor of clinandrium translucent. Anther shallow. Pollinia translucent, yellow, 4 in two pairs.

Flowering period - April.

Holotype - McIlwraith Range, North Queensland. John Walker, 4 - 1969. NSW.

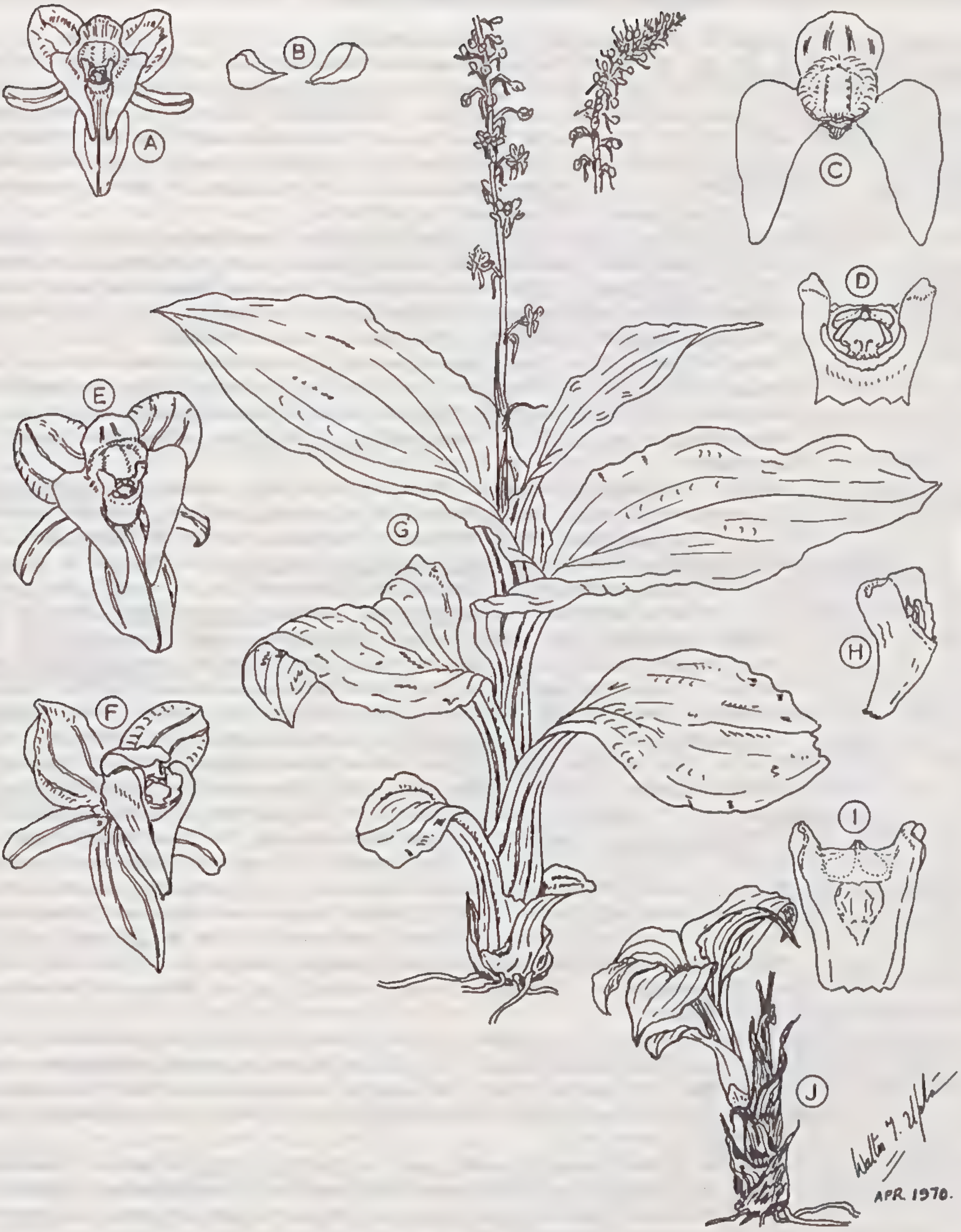
Collected in flower in April 1969 by John Walker in the McIlwraith Range, north of Coen, North Queensland. There were no other Malaxis species in the area, at an altitude of about 2000 feet, in deep gullies, covered by thick tropical growth. Large colonies, about 500 - 800 plants.

It is not like the other two species, namely *Malaxis latifolia* and *M. xanthochila*, in Australia. If anything it is nearest to *M. xanthochila* in both plant and flower, but the flowers in *M. xanthochila* are green and the labellum and perianth segments are quite different.

Don Blaxell of the National Herbarium, Royal Botanic Gardens, Sydney, sent a specimen of this species to the Herbarium, Royal Botanic Garden, Kew, in 1970. The reply from Mr. Peter Hunt (9th. August 1971) indicated that it was most likely a New Guinea species - "almost certainly a New Guinea species of *Malaxis*, but until such time as the genus is monographed for that island I would hesitate to suggest a name." Subsequent checking by both the author and Don Blaxell has failed to establish the identity of this species. It is considered desirable, therefore, to name this species from Australia and to assume that it has not been described from elsewhere.

W.T. Upton, 71 Wesley Street, Elanora Heights, N.S.W. 2101.

The Author and Editor in particular, wish to sincerely thank Joe Betts, our hard working President for his superb Latin translations. At very short notice Joe re-acquired his knowledge of this very tricky subject to translate Wally's descriptions in compliance with International requirements.



Key to drawings - *Malaxis marsupichila* W.T. Upton sp. nov.

A	Flower from front	X 4
B	Pollinia	greatly enlarged
C	Labellum from front	X 8
D	Column from above	X12
E	Freshly opened flower	X 6
F	Old flower	X 6
G	Small plant	2/3
H	Column from side	X12
I	Column from underside showing stigma	X12
J	Small old pseudobulb and new shoot	X1/3

Orchids Common To North Queensland & South Eastern Australia. cont.

makes a significant penetration of its southern distribution.

Pterostylis gibbosa ssp. *mitchellii* (Lindl.) Blackmore & Clemesha, is undoubtedly the most north easterly occurring species of the rufous group of *Pterostylis*. It occurs near Taree in N.S.W. Tamborine Mountain, Queensland and in various localities to almost as far north as Rockhampton, whereas other members of the group have a more southern and inland distribution. Though *P. gibbosa* ssp. *mitchellii* occurs in some inland areas also. The species has been found in a single area of the highlands of North Queensland. Flowering in North Queensland is in July, but it is mainly in September - October, in N.S.W.

P. parviflora R.Br. is a very widespread orchid in South Eastern Australia and is found in all states except W.A. It occurs from the coast to Western Slopes and involves a number of not clearly defined forms. It is only known from the Paluma - Seaview Range area of North Queensland. Tropical plants show little variation. Flowering is in April. In S.E. Australia it is variable in flowering, though April is one of the most common times.

P. grandiflora R.Br. occurs from Tasmania to Southern Queensland and is plentiful in many places. It grows chiefly in rainforests of the coast, or ranges. In North Queensland it occurs in only a few highland areas. The flowering time in North Queensland of April - May, is at the beginning of the flowering time in S.E. Australia. In colder climates, such as Tasmania, it is later in flowering.

Rhinerrhiza divitiflora (F. Muell. ex Bent.) Rupp. This is one of a number of species which the Hunter River & Hawkesbury sandstone belt has prevented from migrating further south. It does cross the Hunter River (a plant was once found at Berowra, near Sydney) but is rare there, as is *Dendrobium kingianum* Bidw. *Rhinerrhiza divitiflora* is found in forests of the coast and low ranges of N.S.W. and Southern Queensland, however it is confined to the highlands in North Queensland. It is closely related to the genus *Sarcochilus* and in fact, appears little more than a rather distinctive species of that genus, and possibly at some future date, will be united with that genus. It hybridises readily with *Sarcochilus* species.

Sarcochilus falcatus R.Br. occurs from Victoria to Southern Queensland and grows in rainforests of the coast and mountains (mainly the latter). It involves at least two common forms usually one, or the other, is present at a given locality. One has smaller flowers, which are heavily marked with purple on the column. The other form has larger, whiter flowers with fewer markings. This latter form extends to North Queensland, where it is confined to the rainforests of the highlands and is common in some areas. It is better established in the tropics than other species of *Sarcochilus* common to S.E. Australia. In the tropics it flowers mainly in June - July but they are later in the south. Plants of tropical origin in cultivation in Sydney, revert to Spring flowering after a couple of seasons in cultivation.

Arthrochilus irritabilis F. Muell. extends from the northern beach suburbs of Sydney, to South Queensland. It is plentiful in many regions. It occurs too in the highlands of North Queensland and New Guinea. The flowering season in North Queensland is the same as that in the extreme south of its range (December - January). At present no difference between northern and southern races is known.

Taeniophyllum wilkianum T.E. Hunt, occurs at least as far south as the ranges near Coffs Harbour. In Southern Queensland and Northern N.S.W. it is rather uncommon, compared to its abundance in North Queensland, where it grows from the coast to highlands but is confined to rainforests or country that once was rainforest. Flowering is at almost any time of the year in the tropics but limited in the south.

Two species of *Thelymitra* reach tropical Queensland, one is *T. aristata* Lindl. This species involves at least two races. One is common in, but not confined to, the Western Slopes region while a smaller one grows on the coast, including at times upon clumps of *Dendrobium kingianum*. One of these forms, presumably the latter, extends to North Queensland, where as one would expect, it is confined to the highlands. Flowering in the tropics is usually in September - October, but occasionally in March - April. In the south, this, and all other species are Spring flowering, except in cold places where they extend into summer.

T. pauciflora R.Br., is an abundant species in Southern Australia and is found in a wide variety of habitats. It has a limited range in southern parts of the highlands of North Queensland where, as far as it is known at present, it is completely Spring flowering.

The last group of species common to North Queensland and S.E. Australia are those where a pronounced difference occurs between the two populations. In some cases one form is common to both regions while another is confined to one, or the other area. The degree of difference varies greatly, from so great that it is hard to associate the two, to so little that it is barely detectable. In cases where the differences are great, the plants have been

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Orchids Common To North Queensland & South Eastern Australia. cont.

treated as separate species or varieties, depending on the degree of difference, but regardless of the treatment, all the following are treated because of the obvious relationship between northern and southern races. The main tendency in this group is for plants to be well established and often common in both regions, and not to have a very limited range in one or the other regions, as is the case with some species in the previous group. The changes the plants have undergone obviously have allowed them to be "at home" in both regions and not be restricted to a limited region with a climate and conditions similar to that in the area where their main distribution occurs. It would be possible to include some species previously treated, notably Cymbidium madidum and C. canaliculatum in this group as the plants do not fall clearly into the artificial divisions I am using. Some plants in this group are rare, or uncommon in North Queensland, though plentiful in the south.

Bulbophyllum aurantiacum F.Muell. in North Queensland extends from mangrove swamps to cloud forests of about 4,000 ft. and while this species involves a number of leaf forms over its range, there is an overall difference between tropical and southern races. Tropical ones are generally more lanceolate, thinner in texture and darker green. This is a clear case, as the differences being so slight that they are hard to detect. This however, is not true of its relative B. crassulifolium (A. Cunn.) Rupp, as its foliage and creeping, rather than pendulous habit is quite distinct, though the flowers are very similar. The distribution of B. aurantiacum and this species overlap in Southern Queensland and N.S.W. north of the Hunter River, but generally they prefer different habitats. B crassulifolium extends further south to near Nowra. It is absent from North Queensland.

B. exiguum F. Muell. is a common species from Southern Queensland to Southern N.S.W. It has been reported from North Queensland but all records of it are incorrect and refer to B. newportii (F.M. Bail.) Rolfe. B. exiguum flowers in April. B. newportii is more robust than B. exiguum and is its tropical counterpart. It is confined to North Queensland and so B. exiguum and B. newportii are completely isolated from each other. It flowers from September to December, so in this case the common pattern of tropical plants flowering in Autumn and their southern counterparts in the Spring, has been reversed. One of the synonyms that should be applied to B. newportii is B. exiguum var. dallachi Benth. This variety has been wrongly applied to B. exiguum because of the similarity between the two. B. newportii has a number of other synonyms. One of these is probably the result of Bailey's extraordinary error in originally describing the plant as a Sarçochilus, it is so different from that genus that no botanist would think to compare the two. It is difficult to understand how this error was made.

While the degree of overlay between tropical and southern species in Bulbophyllum is limited to those described so far, it is much better developed in Dendrobium.

Dendrobium aemulum R.Br. involves three distinct forms, one is common to North Queensland and S.E. Australia, another is endemic to the south and the other the north. The one confined to the south is the "Iron Bark" form which extends from south of Moruya to Southern Queensland. It has shorter stems and slightly different flowers to the "Brush Box" form, which also grows on other trees in rainforests. While it is principally a plant of the North Coast and Southern Queensland, it does extend as far south as Sydney. It is the form which reaches North Queensland, though it is not common there and is confined to a limited part of the highlands. The form endemic to North Queensland is found mainly (if not only) on Callitris trees of the highlands. It has very slender stems and produces only one or two flowers to each inflorescence. The three forms described here, all have similar flowers, but maintain their growth habit differences in cultivation. While D. aemulum has extended from its main home in N.S.W. and Southern Queensland to North Queensland, and a distinct form seems to have evolved there, it appears to have gained little tolerance of warm tropical winters.

Though D. racemosum (Nicholls) Clemesha & Dockrill, was at one time regarded as a variety of D. beckleri F. Muell., the two are quite distinct. D. racemosum is confined to the tropics (principally highlands) while D. beckleri extends from the Hunter River in N.S.W. to the Burdekin. Consequently the two do not overlap, though come closer than many in this group do. Plants of the two are easily distinguished whether in flower or not.

Dendrobium linguiforme Sw., has two varieties. One is confined to the tropics and the other the south. The typical form extends from south of Moruya to Southern Queensland. It is also reported from near the Burdekin River, but a plant I have in cultivation from near Proserpine is nearer var. nugentae. This tropical variety shows a preference for the highlands. It differs in having larger, rougher, more rounded leaves and smaller flowers.

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Orchids Common To North Queensland & South Eastern Australia. cont.

A third, var. huntianum was described, but reverted to the type form in continued cultivation.

D. schneiderae F.M. Bail., like D. linguiforme, has two distinct forms, but these are widely separated as neither are present in the arid region of central Queensland. The typical variety found in Northern N.S.W. and Southern Queensland, and is principally on, and near the McPherson Range. The var. majus Rupp, is known only from the Eungella Range, where plentiful. In his description Rupp only mentioned size and the long racemes. He overlooked the more important flower details, as the two vraieties differ in a number of minor points. The raceme length also, is important, as it is maintained in cultivation. This is a case of two varieties, both with a rather smaller distribution, growing many miles from each other.

D. speciosum Sm., is a variable species. Attempts have been made at describing the varieties and these have resulted in a confused mess. The full range of the species is from about the Endeavour River to Eastern Victoria. A number of variations of it occur over its wide range and as I have not seen as many specimens as desirable from some parts of its range, a full comparison is not possible at this stage. In North Queensland it is confined to the highlands, where it is quite common in many places. From South Queensland to Victoria the species grows on the coast and ranges. The form called var. speciosum differs in its northern and southern range. The following general differences occur. Though tropical plants tend to have more slender, upright stems, which bear smaller leaves, the flowers tend to be smaller, paler than the yellow forms of the south, and are on a more upright spike. In Sydney, North Queensland forms are much more difficult to flower than southern ones. Some North Queensland plants produce aerial growths regularly, as does D. kingianum. One plant I have, which does this, produces inflorescences which, unlike southern races of the plant, do not have flowers to near the base of the inflorescence but instead, have several large bracts there. This is true also of a dwarf type popularly called "var. compactum". The var. hillii is reported to occur in north Queensland but I have not seen a specimen so I cannot say whether it matches the southern race or not.

D. ruppianum A.D. Hawkes, is a close relative of D. speciosum and natural hybrids between it and D. speciosum are known from several areas, though they only occur as single plants, or a small number in a large population and there is no evidence that the two species are merging.

D. teretifolium R. Br., appears to have several undescribed varieties in New Guinea, one described variety in North Queensland (var. fasciculatum)and two in S.E. Australia. One of which has two forms, so here is an example of an orchid which evolved into more distinct races in S.E. Australia, than in the tropics of Australia.

In S.E. Australia, along coastal regions, in well lit situations, the showy and beautiful var. teretifolium is found. It extends well south of Moruya. I have seen it a little south of Lake Tuross and it probably extends about as far south as Narooma. In rainforests of mountains and ranges, the var. fairfaxii is found. Both forms of this orchid (forma fairfaxii and forma aureum) flower shyly and are not showy. Unfortunately the var. teretifolium is becoming rare as holiday centres etc. are developed along the coast. It may soon be near to extinction over most of its former range which already has some large gaps in it and seedlings should be raised to assist in its perpetuation.

In North Queensland the var. fasciculatum occurs from mangrove swamps, only a few feet above the high tide mark, to near 4000 ft. in the ranges. It is a very showy plant and occurs both in well lit and shady places, There appears to be no difference between lowland and mountain forms and both grow easily in Sydney. In North Queensland one variety grows over the equivalent range that two (one with two forms) occupy in the south. It is not clearly known how far south this plant extends, or how far north var. teretifolium extends. However a study of the subject is needed and a comparison of the specimens from the place nearest that where the two varieties grow is desirable. It is possible that D. teretifolium may grow right along the Queensland coast because of its ability to grow in mangrove swamps.

D. tetragonum A. Cunn., has a distinct tropical and southern variety. The var. giganteum differs from the type variety in having a different colour pattern and flowering irregularly from May to November in the tropics, and through the warmer months in cultivation in the south. Usually it is larger than the typical variety, but not always. Albino and near albino forms are more common in this variety than in the southern one. It has been claimed that the variety tetragonum occurs in North Queensland but I do not believe so, all specimens I have seen thus claimed, are small plants, or small flowered clones of the var. giganteum.

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MEMBERSHIP FEES 1976 - 1977.

Members are reminded for the last time that fees are now due. As noted in The Orchadian on many occasions, our fees are due on the 1st. July of each year. Are you overdue ? Check your cheque book NOW!
Membership renewals not paid within TWO MONTHS (2) of this issue will result in the delinquent members name & address being removed from the mailing list until the fees are paid. This action has been found necessary by the tremendous increase in postal and printing costs. For the past 13 year's we have steadfastly fought to keep costs down and have continued to post The Orchadian to tardy members. We cannot afford to do this today. Support your Society and get that money in. Should our able Treasurer find that you have already paid your dues for the coming year he will credit your account for the following year and advise you accordingly.

ANNUAL GENERAL MEETING AND ELECTIONS.

The Election Returning Officers hereby give notice that:
The closing date for nominations of candidates for election to Council is 12th. August 1976.
The date of election is Thursday 23rd September, 1976.
The date of the Annual General Meeting is Saturday 25th September 1976 at 10.00 a.m.
All elected Councillors are offering themselves for re-election to the positions they now hold and you are reminded that the position of Asst. Hon. Secretary is also VACANT!

By special arrangement with the Director of the Royal Botanic Gardens, Sydney, this year's A.G.M. will be held at that establishment. Details will be given in the September issue of The Orchadian. For the present we whet your appetite with the information that after the Annual General Meeting, members will be invited to a tour of the orchid houses and a visit to the Herbarium - the latter under the guidance of Mr. Don Blaxell.
Please note: We should appreciate early advice from members who will be attending as this information will help determine the particular meeting room we should need. Let the Hon. Secretary know by the 15th. August, if you can please.

1976 PITTWATER FESTIVAL A.N.O.S. 2nd. ANNUAL SPRING SHOW.

To be held in the Mona Vale Hall, Mona Vale Park, Pittwater Road, on Friday 10th Sept. benching from 9a.m. - 10 p.m. 11th from 9 a.m. - 9 p.m., 12th from 10 a.m. - 4 p.m. Contact the Show Marshal Norm Hilliger - 99 2468, for Show Schedules etc. and jot the dates in your diary. Combine a visit to the show, with a stop at Stony Range Flora Reserve too!

Orchids Common To North Queensland & South Eastern Australia. cont.

S.C. Clemesha

Similarly southern plants which are very large, always have other southern type varietal habits. The important differences between these varieties is not their size. The name *hayesianum* has been applied to albino specimens from north Queensland. It should not be, as it is an albino of the var. *giganteum.* The description of albino specimens as varieties is highly undesirable.

Dipodium punctatum J.E. Sm., is widely claimed to be extremely variable, but in the specimens I have seen, over a wide range in N.S.W., this is not true. I have seen 2 basic forms and while there is variation within these, it is not great. I have not seen any evidence of intermediates in places where the two grow near to each other. One of these forms grows in very sandy soils, especially behind ocean beaches and extends to sandstone areas further inland e.g. Pennant Hills, about 20 miles from the sea. It is generally smaller than the other form in plant size and usually has a little chlorophyll on the stem, where it is more often absent from the other form. Its flowers are nearly white, but heavily blotched with deep red. The other form favours other soil types, including stony ones. At times it occurs in sandy areas, usually where the other form is absent. Though at times I have seen both forms within 100 yards of each other.

Generally its more robust stems bear more flowers in the case of larger specimens. It seldom, if ever, shows any chlorophyll. Its flowers are a fairly uniform pink, with fine, not very conspicuous spots. It occurs from the coast to western slopes.

Plants from the tropics differ again, their flowers generally are paler and unspotted. Rupp claimed other minor differences existed when reducing *D. stenocheilum* to a variety of *D. punctatum* but Dockrill found these varieties unstable and reduced the variety to a synonym.

The genus *Liparis* has no species common to North Queensland and South Eastern Australia, except the two terrestrial species, however the *L. reflexa* (R.Br.) Lindl. of South Qld. & N.S.W. closely resembles *L. nugentae* F.M. Bail., *L. bracteata* T.E. Hunt, *L. cuneilabris* F. Muell. and *L. fleckeri* Nich., all of North Queensland (chiefly highlands).

L. reflexa appears to be more or less a southern counterpart of these species, although a number of species of *Liparis* from New Guinea and South East Asia, all have flowers which are quite similar.

Pterostylis curta R.Br., is freely distributed through N.S.W. and Victoria, and in South Australia, about as far west as Adelaide. In Tasmania it is less plentiful but locally common. As well as occurring in coastal regions it occurrs in sheltered gullies of ranges in inland regions e.g. near Tamworth, the Warrumbungle Ranges and the granite belt in Qld. From the Illawarra coast northward, a species closely related to P. curts occurs. It is *P. hildae*. Though it is related to it, the two are distinct in the few areas where the two grow together. Intermediates are not known.

P. hildae is a rain forest plant and is common on the north coast of N.S.W. and all but replaces *P. curta* in South Queensland. *P. curta* does occur in the granite belt and a few other localities between Brisbane and the N.S.W. border, but it is much less common than *P. hildae.*

For many years *P. curta* was recorded from north Queensland (highlands) but Dockrill on examining plants from there, reached the conclusion that they were *P. hildae.* A conclusion more logical in view of the southern distribution of both. However, later studies have shown the plant to be clearly distinct from both and it therefore was described as *P. stricta* Clemesha & Gray.

P. stricta flowers in April - May, whereas *P. hildae* and *P. curta* flower in the Spring. This is in their natural habitat. In cultivation at Atherton all 3 flower in Autumn, while in Sydney all 3 flower in the Spring.

P. ophioglossa R.Br. Rupp reported *P. ophioglossa* var. *collina* Rupp, from near Proserpine in North Queensland. The form he called var. *collina* from North Qld. occurs both near Proserpine and on the Seaview - Paluma Range area, and in a few other parts of highland North Qld. The form from these areas has smaller flowers than the N.S.W. and South Qld. form and these are reddish-brown (it is on the basis of these points that Rupp determined his doubtful variety). However the type form of var. *collina* is from near Paterson N.S.W. and has flowers which have a short galea and a less curved labellum, and shorter points on the lateral sepals. The North Queensland plants are proportionately longer and narrower than var. *ophioglossa* and even more so than var. *collina*. This is true of the curve of the labellum also. Consequently the tropical plants are even more distinct from Rupp's var. *collina* than they are from the var. *ophioglossa.*

To be concluded Vol. 5. No. 5.

FITZGERALD'S UNPUBLISHED PLATES.

7a Cross St.,
Toowong.
Qld. 4066

The Editor,
"The Orchadian".

Dear Mr. Corrigan.

My aim in this letter is to answer Joe Betts's question in the latest "Orchadian" concerning FitzGerald's unpublished plates.
More than likely someone from Sydney, better placed than I will have already solved the mystery, but in case not here is my solution -
Recently at the Queensland Herbarium I have been sorting through correspondence from the late H.M.R. Rupp to the late T.E. Hunt. This was kindly donated to the Herbarium by Mr. Hunt's widow after his death.
Rupp had updated Rogers's "Enumeration of R.D. FitzGerald's unpublished plates in the Mitchell Library" and sent a copy to Hunt. No. 89 on this list is identified by Rupp as Dendrobium johnsoniae F.v.M. There is no locality given.
As pointed out by Mr. Betts the date on this drawing (28/8/88) is close to that on D. eriocarpum (22/8/88) for which the locality is Dinner Island. It seems reasonable that the D. johnsoniae came from here, or at least from Mackay.
According to Rupp in a different letter - "Dinner Island was a name applied to an island at the extreme S.E. corner of New Guinea (Papua) which, since the establishment of the Anglican New Guinea Mission has been better known as Samari. I think (Rupp speaking) it is very probable that this is the Dinner Island from which the D. eriocarpum and D. johnsoniae got into FitzGerald's hands."
I would now like to pose a question - is D. johnsoniae an Australian species or not? Rupp and Hunt excluded it from their list of Australian members of the genus in their "Review of the Genus Dendrobium" (Proc. Linn. Soc. N.S.W. 72, 1947), but I doubt if they were aware of the specimen labelled "Persich, Endeavour River 1884" in Mueller's writing (Dockrill, "Australian Indigenous Orchids I: p.430) at Melbourne. In the Queensland Herbarium there is a sheet with flowers only, which could be D. atroviolaceum (closely related to D. johnsoniae) or D. johnsoniae itself. This was collected in 1934 in the "Mossman district" at about 2,500 ft. To my knowledge no other plants of D. johnsoniae or D. atroviolaceum have turned up and I would regard both these records as doubtful. Can anyone shed any more light on this?

Yours sincerely
Peter Laverack

AN UNUSUAL SARCANTHINAE FROM THE UPPER ALLYN.

Peter Vaughan

I have made quite a few trips to the upper Allyn River area, which is under the protection of the Barrington and Gloucester Tops. Although this area is 60-70 miles inland, it is typified by very lush rainforest. Consequently this area is the southern limit for quite a few species, namely Dendrobium tenuissimum, D. beckleri, D. falcorostrum, Pteroceras spathulatus and Liparis coelogynoides, which are prevented from ranging further south by the Hunter Valley, combined with a general dryness to the south. Of the species that do extend further south some do not do so in quantity, namely D. gracilicaule and D. gracillimum. The epiphytic orchids that grow here are found in distinct progressions with altitude being the differentiating factor, together with the protection afforded by gullies, to a lesser extent.
The epiphytic orchids I have found there include Dendrobium speciosum var. hillii, D. teretifolium var. fairfaxii, D. beckleri, D. tenuissimum, D. gracilicaule, D. gracillimum, D. falcorostrum, D. linguiforme, D. pugioniforme, D. aemulum, Sarcochilus falcatus, S. olivaceus, S. hillii, Pteroceras spathulatus, Plectorrhiza tridentata, Papillilabium beckleri Bulbophyllum crassulifolium, B. exiguum, B. elisae, Cymbidium suave and Liparis coelogynoides. Nearby I have also found D. cucumerinum, D. tetragonum, Rhinerrhiza divitiflora, S. australis, B. aurantiacum, C. canaliculatum & L. reflexa, and I think that few of these may well be found in the aforementioned area.
Unfortunately our State Forestry Commission is turning this very diversified rainforest into an epiphytic desert and along with the rainforest will go the creatures that require it to live in.

continued 40.

An Unusual Sarcanthinae From The Upper Allyn. cont.

The clearing of large areas is doing widespread destruction, demonstrated by those areas cleared 20 - 50 years ago, which suffered severe erosion and regrowth which was wet sclerophyllous forest, not rainforest. This is very significant as the dominant tree in the new forest is spotted gum, a tree unsuited for epiphytes.

I find this complete lack of foresight apalling and can only feel sorrow for the native cat I often see in my camp, the paddymelon wallabies that one can hear crashing through the forest at dusk, the beautiful regent bower birds and the brush turkeys one can catch glimpses of by being quiet and careful.

There is even sadder news now that the woodchip industry may move into the area.

There is a Barrington Tops National Park, but this incorporates very little of the low altitudes, where a lot of the epiphytes thrive.

Whilst in this area last spring I looked aver quite a large area and as I was early for the flowering season I did not see much, but I was looking for Sarcanthinae species. Especially the smaller members of the family.

In one area where the Forestry Commission had fell cleared all the trees I collected various Sarcochilus olivaceus plants and took these home to watch their flowering. They were all opening normally and I found the form and colour to be quite consistent with virtually no variation, until one day I found a flower I had initially overlooked. The plant was decidedly S. olivaceus in appearance but the flower was different: being yellow-brown in colour, with two well developed, and surprisingly large lateral projections on the labellum. This plant created much excitement and was rushed off to Steve. Clemesha for a second opinion.

With his help we were able to obtain a clear summation of the floral segments of the plant: segments very similar to S. olivaceus in shape, the dorsal sepal came forward over the column, the lateral sepals had slight twisting. The labellum was smaller, more cuboidal, with two very distinct and relatively large lateral projections and displayed the characteristic red stripes of S. olivaceus. Overall flower colour was yellow-brown.

Our first thought was that it might be a natural hybrid between S. olivaceus and P. spathulatus but as the labellum spur was quite small we did not wish to dissect it to establish if it were hollow, and the plant bore no other features of P. spathulatus we discounted our early theory and considered S. harriganae. However this does not appear to be a valid species, there being very little information upon it. Rupp himself, wrote that the black spots did not reappear in cultivation and Len Archer when shown the original site of this species, by members of the Harrigan family, found that plants had been marked by wasps which produced the black spots on the leaves. Rupp's original description mentions this as being a possible cause. It would appear that Rupp's S. harriganae would be either P. spathulatus, or P. spathulatus X S. olivaceus. Rupp's drawing, in the original description (Proc. Linn.Soc. 29th. June 1938) is very suggestive of this species and coincides with Dockrill's drawing in "Australian Indigenous Orchids" of S. spathulatus, whilst the suggested P. spathulatus X S. olivaceus does not appear likely, especially when you compare the plant with Dockrill's drawings.

At this stage the only decision left to us was that the plant was a sport, similar to Rupp's Dendrobium elobatum in Vic. Nat. Vol.69. 9. Jan.'53., which was sent to him by Mr. Stanley St. Cloud, from Cairns. This plant flowered as a normal D. discolor and so the new species was withdrawn (Vic. Nat. Vol.70. 10. Feb.'54). This was suspected in our plant, especially since this was the only recording in an area that has been thoroughly investigated so many times. An important point to remember is that the flowers were past their peak and declining, so we could not see their true form. I suspect this may play an important role in the variation. With all this in mind the plant was put away to be watched next Spring.

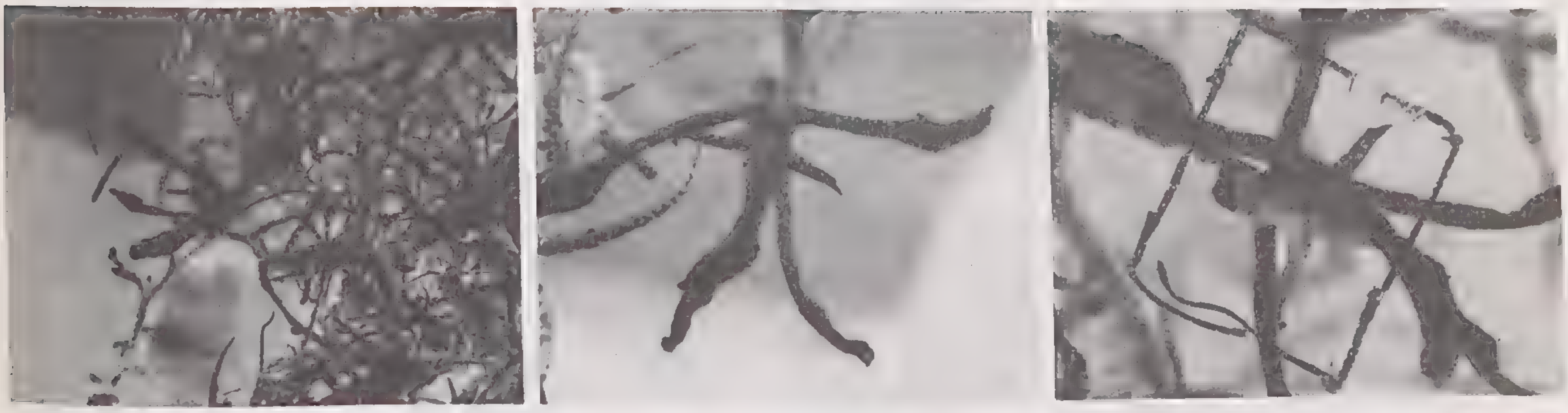
Recently, on discussing the S. olivaceus of the upper Allyn River with Noel Jupp, I was informed of a colony of a very yellow form, found growing in the area. If this colony is of similar plants, then it would mean that this would be a self fertile and self perpetuating form and valid for registering. As to a new species, I doubt very much, due to the close affinities with S. olivaceus. However, it may well be a new variety and our first yellow Sarcochilus.

Peter Vaughan

DON BLAXELL TO LECTURE AT SYDNEY GROUP - 12th NOVEMBER, 8.00 p.m.

Sydney Group have snared Don and he will talk on his orchid experiences whilst overseas. As the talk will be supplemented with slides I am sure it will be a night to remember. Warringah Group in particular, and indeed all interested members are cordially invited. Australian-American Assoc., 41 Lower Fort St. Spread the word! Sydney Group will also be holding their Spring Show on the 16th September, in the same building.

An Unusual Sarcanthinae From The Upper Allyn. cont.



Malaxis marsupichila W.T. Upton - INTERESTING CORRESPONDENCE.

Department of the Capital Territory,
City Manager's Office,
Canberra Botanic Gardens,
5th May, 1976.

Mr. Norm Hilliger,
Hon. Secretary,
A.N.O.S. etc.

Dear Sir.

In the March 1976 publication of "The Orchadian" a new species of Malaxis was described, namely Malaxis marsupichila W.T. Upton sp. nov.

It was with interest that we read the description given with the accompanying diagram.

In the description

"It is not like the other two species, namely Malaxis latifolia and M. xanthochila in Australia. If anything, it is nearest to M. xanthochila in both plant and flower, but the flowers in M. xanthochila are green and the labellum and perianth segments are quite different",

it was noted that the flower colour was said to be green.

A plant sent to the Canberra Botanic Gardens from the McIlwraith Ranges has since flowered and both the flowers and the flower spike are deep maroon in colour, though still having the appearance of Malaxis xanthochila in that it has a fringed labellum.

So the fact that "green coloured" flowers is used as one of the means of identification of M. xanthochila is of interest. Colour is generally a very poor guide for identification and secondly the general likeness of the plants that are here at the Canberra Botanic Gardens compared to the newly described species seems to warrant further investigation.

I would be interested in comment on these observations as I am sure they will be of interest to the members of the Society.

Yours faithfully,
J.W. Wrigley
Curator.

-oOo-

71 Wesley Street,
Elanora Heights,
N.S.W. 2101.
22nd. June 1976.

Mr. J.W. Wrigley,
Curator,
Canberra Botanic Gardens,

Dear John,

Your letter of the 5th. May addressed to the Secretary of A.N.O.S. referring to Malaxis marsupichila was passed to me for comment.

One could hardly say the remarks made by me on the similarity, or otherwise, of the two other species of the Genus Malaxis in Australia, is part of the description. This was intended to assist those who are not conversant with plant descriptions and to give them at least some idea of the new species in relation to the other two.

If we seriously wish to compare Malaxis marsupichila with M. xanthochila we must consider the detailed description of each. I entirely agree with you that colour is generally a very poor guide, but in the context in which it was used I felt it was quite satisfactory. All descriptions of M. xanthochila I have read quote the flower colour as green. A.W. Dockrill in his "Australian Indigenous Orchids" states "Flowers.....pale green". As a matter of

continued p. 52.

TERRESTRIAL ORCHIDS OF SOUTH AUSTRALIA'S SEMI ARID AREAS.

R. Bates

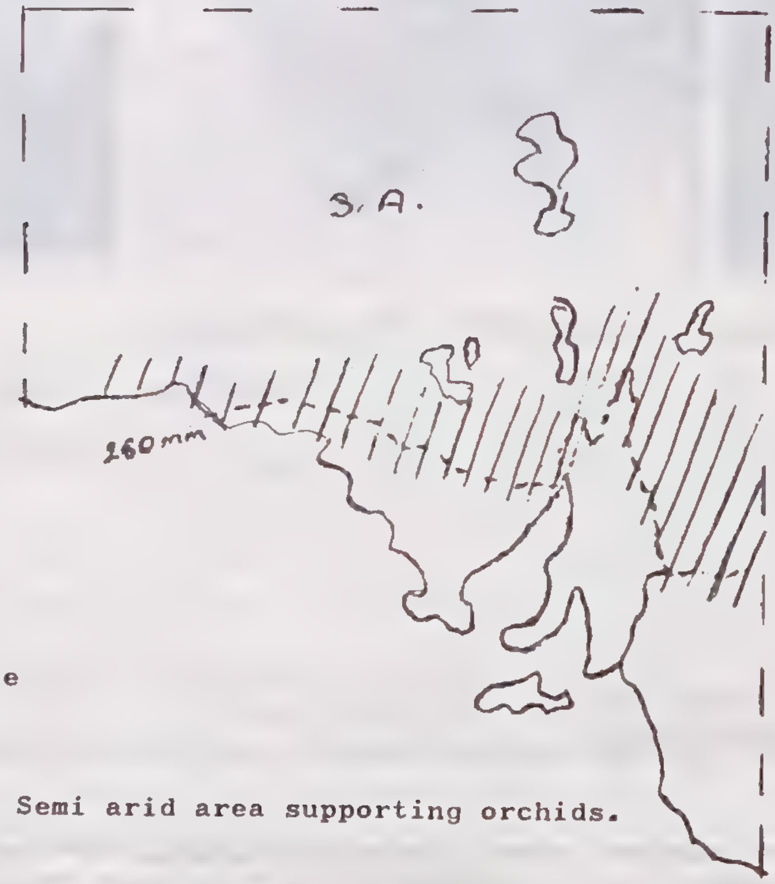
Pterostylis mutica

Pterostylis hamata

Caladenia dilatata

Thelymitra nuda

Prasophyllum occidentale



Pterostylis biseta

Pterostylis boormanii

Caladenia filamentosa var. tentaculata

Prasophyllim nigricans

Caladenia dilatata var. cincinna

▨ Semi arid area supporting orchids.

South Australia has the dubious distinction of being the driest state in the driest continent. Only 26% of the state receives greater than 250 mm. (10") mean annual rainfall. Yet at least a dozen species of terrestrials grow outside the 250 mm. isohyet.

How do they survive in this harsh environment of drought and heat ? Perhaps the most obvious reason is that they complete their growth cycle in the cooler winter months. South of the 250 mm. isohyet the climate is Mediterranean, with mainly Winter rainfall. Further north the months with heaviest rainfall are September, then November and finally in the far north Summer rainfall predominates. It is not the low rainfall that makes the environment so difficult for orchids, it is the irregularity. Completely rainless periods of three months are not infrequent, even in Winter. Yet the orchids survive.

One factor shared by many species is their large tuber size.

Pterostylis of the 'rufa' group flower in the heat of October and November, after the basal rosette of leaves has withered. They draw their nourishment from the present season's tuber, which shrivels away as each flower opens. The number of flowers that open depending on the food available in the tuber. The flowers do not draw on the following year's tuber which has usually reached maximum size by the end of September. If the season has been poor, all the food of the old tuber will be channeled into the new season's tuber and no flowers will open. The above ground section of Prasophyllum nigricans often weighs as little as 1/5 of the tuber's weight. This species flowers in March and April, the driest months in the ares where the orchid is common. This is possibly so the Winter can be used in developing a new tuber. The tiny leaf can't be expected to photosynthesise enough to develop a large tuber. However, an examination of the soil around the tuber often reveals a purplish-white mass of threads of the mycorrhiza which are in symbiotic relationship with it.

Fertility is another advantage. This is possibly why so many species of the Pterostylis multi-flowerers extend into the desert areas. In the Northern Flinders where Pterostylis mutica reaches its greatest development, plants with as many as twenty flowers are common, each flower producing a seed pod which swells to the size of the flower itself. Each plant thus producing millions of seeds annually. The one Thelymitra which is common in these dry

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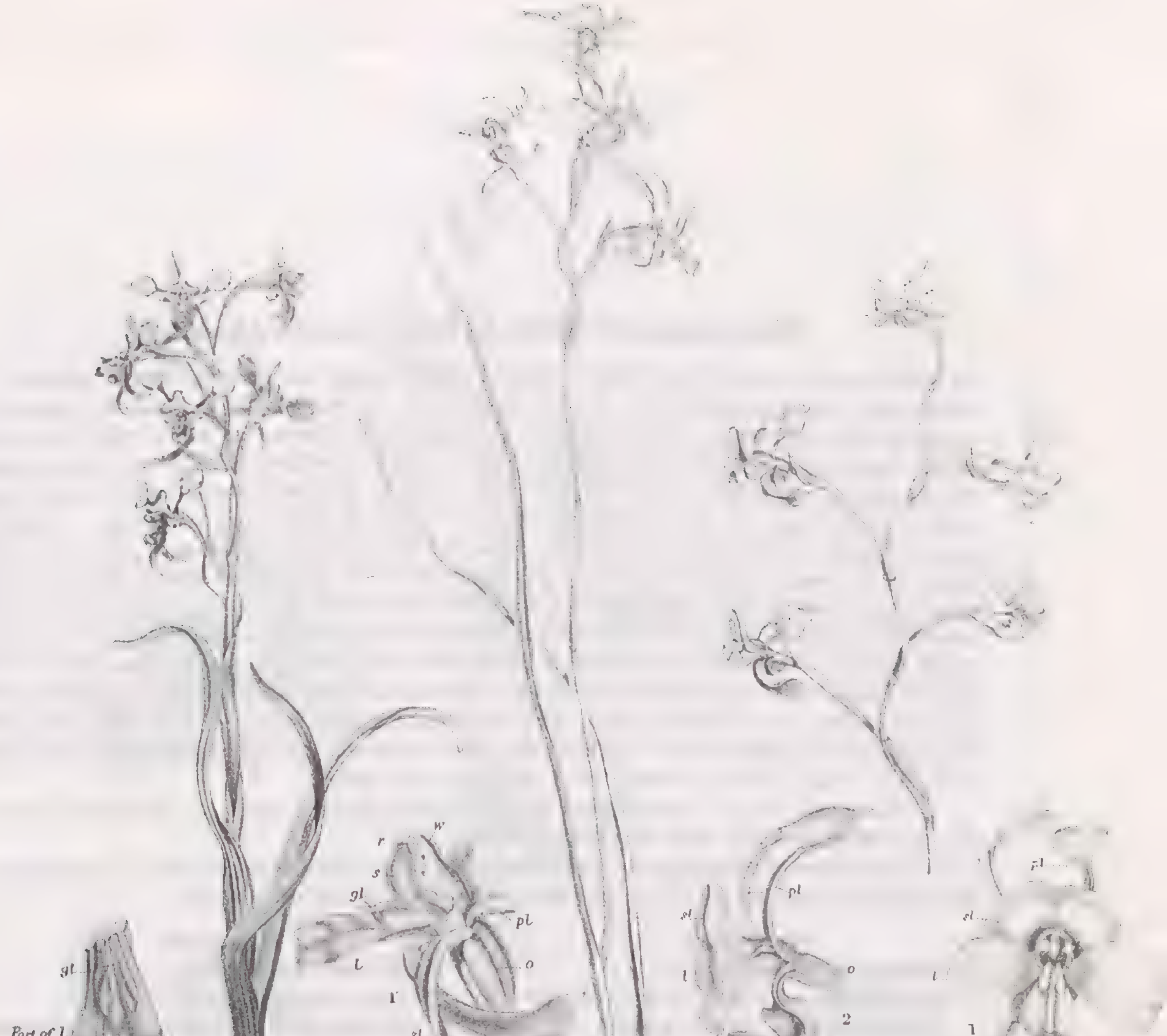


From Nature by R.D.Fitzgerald F.L.S

On Stone by Arthur J. Stopps.

DIURIS

Maculata

Æqualis

Sydney. N.S.W, Thomas Richards, Government Printer.

Diuris maculata *(Smith)*. Diuris æqualis *(Mueller)*.

In *Diuris maculata* the dorsal sepal leans forward for half its length, then turns upwards and backwards; the lower sepals, forming channelled tails, cross one another below the flowers. Between them the orbicular side petals stand out on footstalks, and above the cross sepals projects the labellum, the sides of which act as wings to the column, and the central portion is formed like the withers of a horse, on which rest two long glands like the sides of a pack saddle. Above the labellum is the stigma, formed like a shovel, into the round edge of which is let in a large boss (the rostellum), to the back of which the pollen masses are attached. Should this boss be touched it immediately adheres, and the pollinia are drawn out from behind the stigma. The central portion of the labellum must act as a resting place for an insect, and the plant be fertilized, either by its own pollen returned into the flower, or by that from some other flower should the insect leave immediately after the removal of the pollinia. I have frequently found unfertilized flowers deprived of the pollinia, and others fertilized though retaining the pollen masses in the anther. This Orchid is barren when placed under a bell-glass out of the reach of insects. It is the earliest *Diuris* to flower, at least in the neighbourhood of Sydney. It flowers in the beginning of July. It is a common species, and is to be found in open forest, as well as in shady places. It is becoming rarer about Sydney, owing to children (who know it under the name of "Yam") digging up the bulbs to eat them. They are sweet, mawkish, with a slight taste of raw potato.

Diuris æqualis was so named by Baron von Mueller from a specimen found by me at Liverpool. I have, since received exactly similar plants from Moruya and Lake George.

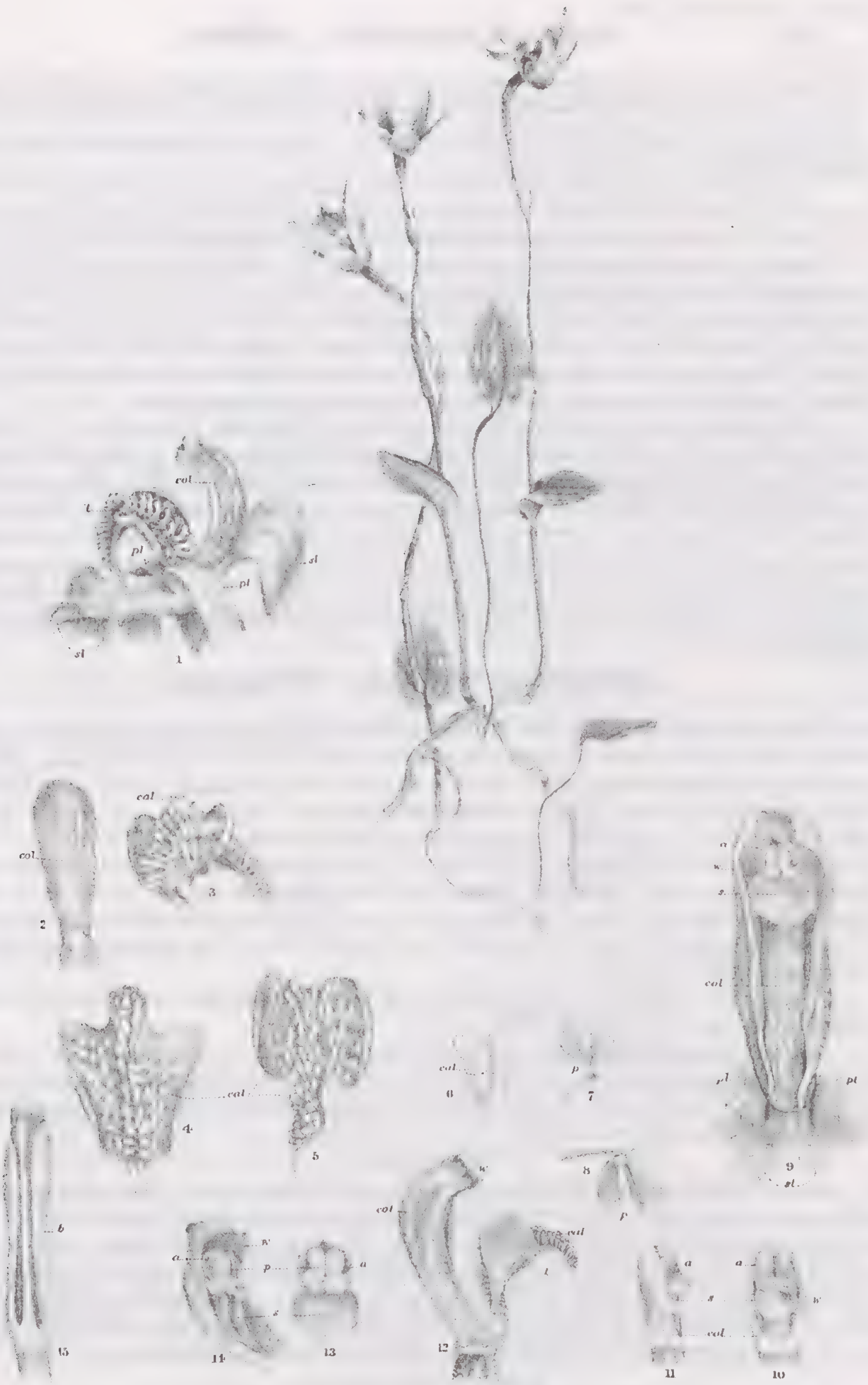
It has been included in *D. maculata*, by Bentham in the "Flora Australiensis," but this is, I think, an error arising from his having seen it only in a dried state. It flowers in October and November.

Diuris maculata.	*Diuris æqualis.*
Generally rather a robust plant.	Very slender and graceful.
Flowers yellow, more or less spotted with brown.	Flowers orange, not spotted.
Lower sepals narrow, brown and yellow.	Lower sepals broad, especially towards the ends, green.
Dorsal sepal ovate oblong, reduplicate on each side.	Dorsal sepal ovate, not recurved.
Petals ovate on brown claws.	Petals cuneate, on green claws.
Wings of labellum broad, irregularly cuneate.	Wings of labellum narrower, symmetrically rounded.
Centre of labellum raised, but not rigidly so.	Centre of labellum raised in a rigid line, giving, with side glands, the appearance of three linear glands.
Wings of the column small, not rising above the rostellum, slightly toothed.	Wings of the column large, deeply indented, rising above the rostellum.

EXPLANATION OF PLATE.

Diruis maculata. Fig. 1. Side view of part of flower, dorsal sepal, petals, and wings of labellum being removed. 2. Central portion of labellum, showing glands. 3. Column, from the front, and wing of labellum. 4. Pollen masses, from the front. 5. Same, from the back. 6. Back of column, wings removed, and anther drawn slightly down. 7. Back of column, showing wings. 8. Stigma, the rostellum removed.

Diuris æqualis. Fig. 1. Flower, from the side. 2. Flower, from the front. 3. Labellum. 4. Pollen masses, from the back. 5. Same, from the front. 6. Back of column, showing wings. 7. Column, from the front. 8. Stigma and anther showing portion of pollen masses, wings removed. 9. Back of column, wings removed, and anther drawn down. 10. Stigma, the rostellum and pollen removed.



From Nature and on Stone by R.D. Fitzgerald F.L.S

ADENOCHILUS Nortoni

Sydney, N.S.W, Thomas Richards, Government Printer.

Genus Adenochilus. *(Hooker.)*

The discovery of this genus is peculiarly interesting, as still further uniting the Orchids of Australia and New Zealand, the genera of which, though almost identical, hardly include a single species in common: a union and divergence that may be well explained on the supposition that these countries, once united, have been so long separated that the species are no longer identical, though the genera are unaltered.

As no description of this genus is to be found in the *Flora Australiensis* (no representative having been found in Australia at the date of its publication), and as I have been informed by my friend, Baron Müeller, that the species on which it has been established has only once been discovered in New Zealand, I append the following description:—

Dorsal sepal incurved, broad, inclosing the column, sepals broader and somewhat longer than the petals. Labellum on a long claw, three-lobed, lateral lobes erect, middle lobe very long, covered with calli, except the point. Column erect, deeply winged through its whole length, the wings prolonged behind or on either side (as in *Chiloglottis*), and above the anther. Anther erect, the outer valves turning back and leaving the pollen masses naked. Pollen masses eight granular. Leaves ovate cordate, high up on the flower-stems, or rising on long petioles from creeping rhizomes. Flowers solitary. Bracts two, the upper opposed by a spatule of almost equal length, clavate at the end.

This genus resembles *Caladenia*, or still closer, *Lyperanthus*. It approaches *Lyperanthus* in the broad dorsal sepal, and in habit to at least one species in that genus (*ellipticus*), but is peculiar in the remarkable expansion of the wings of the column both laterally and behind and above the anther, in the reversion of the valves or flaps of the anther, in the form of the pollen masses, which are neither terete, as in *Lyperanthus*, nor flat and triangular, as in *Caladenia*, in the solitary leaf on the flower-stem, which is very distinct from the leaf in *Caladenia*, and from the leaf-like bracts of *Lyperanthus ellipticus*, which approach nearest to it, and it differs from all other Orchids, as far as I am aware, in the curious spatule, opposed to the usual bract beneath the flower, though I have occasionally observed somewhat similar appendages to bracts and to the ovaries in *Pterostylis*, which I have supposed to be abortive flowers, and which are not constant.

Adenochilus Nortoni. *(Fitzgerald.)*

That a species representing so rare a genus, hitherto not known to belong to Australia, should be found near Mount Victoria, within a mile of the railway, gives hopes that there may be many yet undiscovered species, and even genera, amongst the gorges of our mountains, to reward the search of such enthusiastic botanists as my friend Mr. James Norton, in honor of whom I have given this species its specific name. Its discovery also illustrates the extreme rarity of some species. As yet I know of only one locality in which *Adenochilus Nortoni* can be procured,—that in which it was first found by Mr. Norton, and where, guided by his kind directions, I had the pleasure of examining it. Where a stream pours over a high rock into a basin this little Orchid creeps along the crevices, in the yellow clay and moss, within the spray and on the clumped roots and stems of the ferns (*Todea africana*), actually beneath the waterfall. The leaves are much more numerous than the flowers, and rise, from creeping rhizomes, here and there through the clay or matted fibres.

Could it be actually understood how great a pleasure can be obtained in the finding such a little plant in such a situation, surely Botany would enrol more votaries.

Adenochilus Nortoni flowers in December. I consider it to be distinct from *A. gracilis*, for the following reasons:— The much greater size of the flower, the lesser inequality between the dorsal and other sepals, its being glabrous except a few hairs along the edges of the sepals and petals, and the wings not being divided at the back of the column (as figured by Hooker) but forming a hood over it.

DESCRIPTION.

General characteristics as given under the genus. A delicate glabrous plant. Flowering stems, and leaves devoid of flowers, rising from creeping rhizomes. Flower-stems, including portion below the leaf, about six or eight inches. Leaves, on slender petioles from one to three inches. Flowers about one inch in diameter, solitary, white. Column and wings spotted with red. A band of long clavate calli down the centre of the labellum, and a few smaller calli scattered over the side lobes. Labellum spotted with red, smaller calli white, band of calli along centre of labellum yellow. A few small hairs on the edges of the sepals and petals. Bracts lanceolate, about half an inch. Leaves one inch long or less, lower surface lighter than the upper. Stem below first bract spotted with red.

EXPLANATION OF PLATE.

Fig. 1. Side view of flower, sepals and petals turned down and partly removed. 2. Back of column. 3. Side view of labellum. 4. Labellum, from the back. 5. Labellum, from the front. 6. Calli of central band on the labellum. 7. Pollen masses. 8. Pollen masses—one removed. 9. Front view of column. 10 and 11. Front and side view of column in the bud. 12. Side view of column and labellum. 13. Anther and stigma. 14. Top of column, showing anther and stigma, part of one wing removed. 15. Upper bract, showing spatule.

Terrestrial Orchids Of The South Australia's Semi Arid Areas. cont.

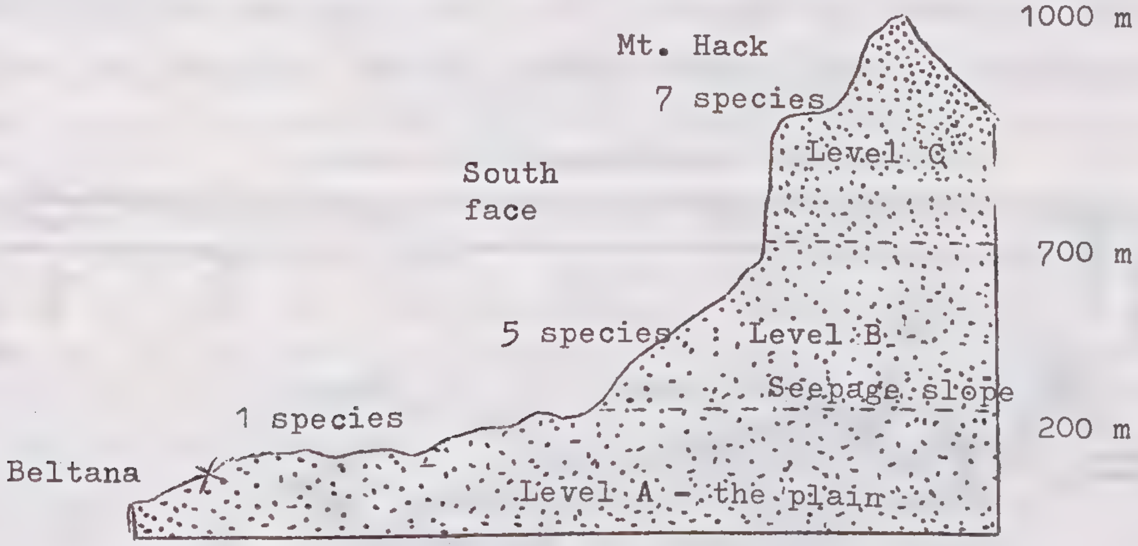
areas (at present included under Thelymitra nuda) is one of the largest and most colourful members of the genus producing as many as fifteen freely opening, blue, white, or purple flowers, invariably with large fertile seed pods, even in dry years.

A slow rate of transpiration during dry periods allows many species to survive. Soon after the first rain of the season Thelymitra nuda tubers send up a large, flat, green leaf which develops rapidly with follow-on rain. If however, a dry period follows, this leaf becomes small, reddish and succulent, almost terete, its transpiration slowed until the next rain.

Dormancy of tubers. Several years ago a friend mentioned that he kept Pterostylis hamata tubers in dry soil under his house for two seasons by mistake, yet when he watered them in the third season, most of them developed normally. I have since tried this experiment with other Pterostylis of the 'rufa' group and find that they can certainly survive at least one rainless year. If a plant of Pterostylis biseta from a dry area is dug up, the tuber pulled off and the rosette put in a dry place, this rosette soon forms another small tuber. I cut up a 5 cm. below-ground section of Pterostylis hamata without tuber, into five small sections and each developed a tiny tuber, producing five plants the following season. Tubers of this species, crushed under foot, reformed in dry soil. A stem of Pterostylis boormanii from a dry region continued to open its buds after two weeks pressed in a book. Little wonder that Pterostylis of this group predominate in semi arid areas.

Choice of location. I once spent two hours walking across a flat plain of sun baked clay sparsely covered with salt-bush and blue-bush, to reach a rocky outcrop on Northern Eyre Peninsula. I saw only two or three plants of Pterostylis hamata (probably), yet around the rocky outcrop itself, where the rocks provided extra run-off of rainfall and protection from drying winds, hot sun and grazing animals, were thousands of rosettes of Pterostylis and a dozen or so Caladenia filamentosa var. tentaculata in flower.

Near Beltana (annual rainfall 200 mm.) in the Northern Flinders, Mt. Hack rises to 1000 m. Too far from the sea to increase the rainfall by much, it nevertheless supplies an ideal situation for many dryland orchid species.



On the plain among rocks and native pines Pterostylis hamata is plentiful. On the seepage slope below the cliff, shaded from excess sunshine and protected from drying northerly winds orchids were abundant, Caladenia dilatata var. concinna, Caladenia filamentosa var. tentaculata, Pterostylis biseta, Pterostylis mutica and a few Thelymitra nuda. Above the cliff in sheltered nooks, often kept damp by the mists that occurred each time cold fronts passed, Caladenia dilatata (type) Pterostylis boormanii and Pterostylis robusta, with a few albino C. filamentosa var. tentaculata and numerous Thelymitra nuda occurred. The northern slopes however, supported only a few plants of an unidentified Pterostylis of the 'rufa' group.

In the vast area of land with rainfall between 200 mm. and 250 mm. the Pterostylis of the 'rufa' group have developed a number of forms and several as yet undescribed taxa have been recorded. Undoubtedly in similar semi arid areas of Western Australia and New South Wales and possibly Central Australia, where only species of one group of the genus Pterostylis occur, other as yet unnamed species will be found.

Large tuber size, completion of life cycle in coolseason, high fertility and flowering rate,

continued p. 48.

Terrestrial Orchids Of South Australia's Semi Arid Areas. cont.

dormancy of tuber in dry years, slow rate of transpiration between rains, and choice of location in a vast area. All these features or factors, and others have enabled orchids to survive in semi arid areas of Australia.

R. Bates, Lot 114 Portmarnock St. Fairview Park. S.A. 5126.

DISTRIBUTION OF DIPODIUM PANDANUM F.M. Bail.

N. Howcroft

In Mr. Clemesha's article in "The Orchadian" Sep. 1975. Vol.5. No.1, page 6, he states that *Dipodium pandanum* does not extend to New Guinea. I don't know if he really meant this, but his statement is incorrect.

Dipodium pandanum does occur in New Guinea. I refer to my article on this species in New Guinea in "The Orchadian" May, 1969. Vol.3. No.3, page 38.

Over the past ten years while on a number of patrols, I have found this orchid in many places. A map showing the localities as I remember them is included with this note.

My most recent find was in June 1975, in the rainforest and *Araucaria* forests of the Arfak Mountains, in the Vogel Kop of West Irian. Plants were noted in the orchid collection of the Manokwari Herbarium and again at Djayapura.

The flowers on specimens found in these areas are the same as those in Papua New Guinea, and those in North Queensland.

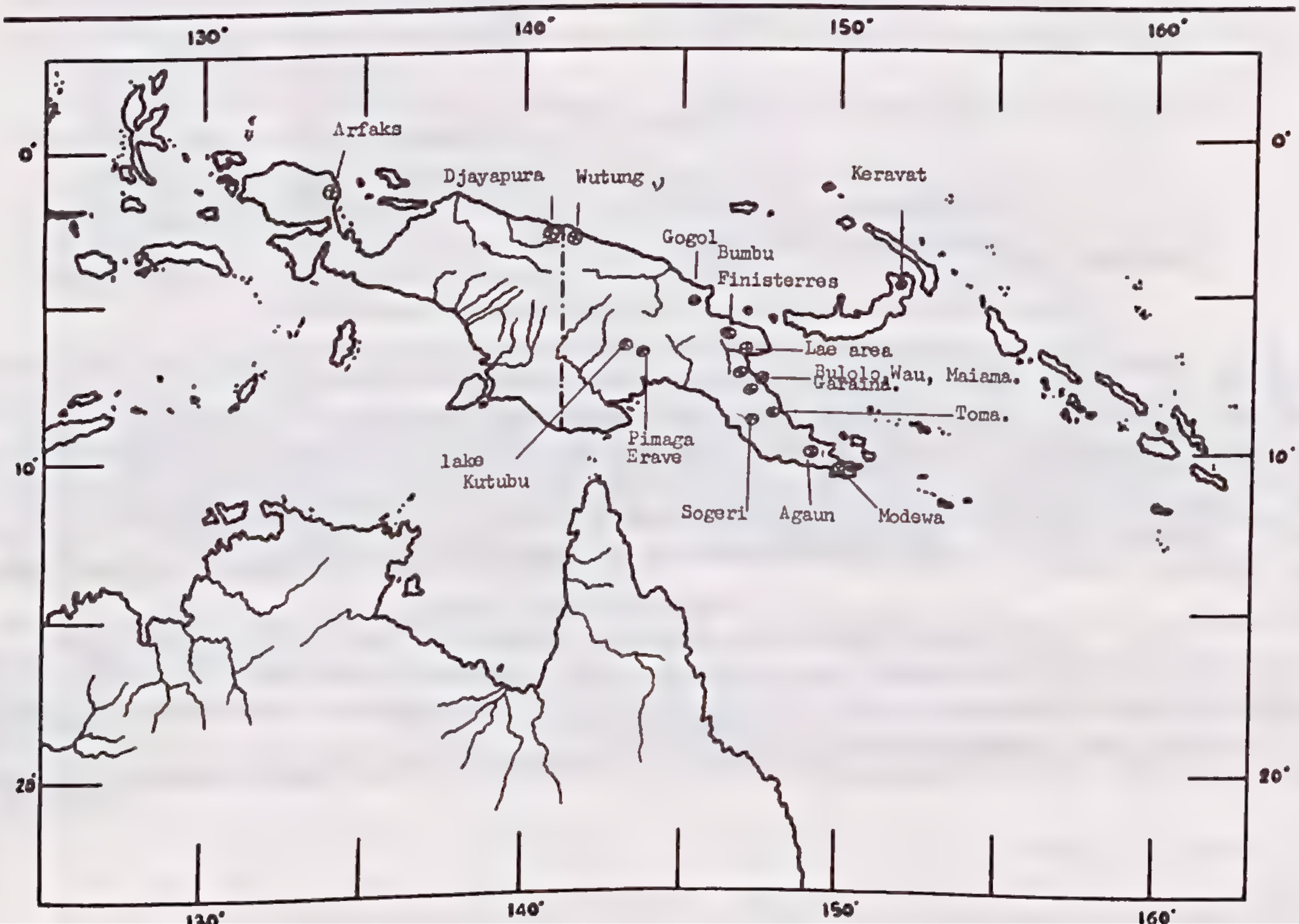
In my article in "The Orchadian" May, 1969. Vol.3. No.3., I metioned that *Dipodium pandanum* is probably synonymous with *D. pictum* in Malaya. Further research may show that this species has a wide distribution pattern.

A drawing in Holttum's "The Plant Life In Malaya" pp. 133-135 of *Dipodium pictum* bears a close likeness to *Dipodium pandanum*.

Schlechter illustrates a flower and its parts of *Dipodium pandanum* F.M.Bail. var. *pilotaenia* Schltr. in his "Figuren-Atlas Zu den Orchidaceen von Deutsch-Neu-Guinea", Tafel CCC XXXVI No. 1295. His specimen varies little from the P.N.G., West Irian and Australian specimens I have seen.

N. Howcroft C/- Department of Forest, Forest Research Station P.O. Box 134. Bulolo. P.N.G.

Some Localities of *Dipodium pandanum* in New Guinea



In February, Ron Kerr gave the Sydney Group of A.N.O.S. an excellent talk entitled "Where Do We Go From Here With Native Hybrids?" Ron ended his talk on an optimistic note. He wisely exhorted our younger members, especially, to get on with the fascinating work of developing the breeding programmes of the future - programmes which will demand many years to complete. In the following introductory article, Noel Jupp gives some signposts and we hope to hear much from our readers on the subject - whether they are inspired to follow those signposts or to argue about directions to be taken.
Noel Jupp intends to fill out some of the lines in more detail in future articles.

Joe Betts

AUSTRALIAN NATIVE ORCHID HYBRIDS.

Noel Jupp

This article was written with some trepidation as it breaks new ground in a journal devoted in the past almost exclusively to species. To me personally it matters little whether any particular plant is a species or a hybrid. If I like it, that is all there is to it. There are so many hybrids that we can easily pick and choose just what we like and exactly what suits our conditions. Balanced against the hybrids are of course the species, building blocks of any hybrid breeding programme. The species bring with them a whole gamut of beauty and mystery, and for the specialist growers of species that is it. To the dedicated hybridist they are the solids of a dream beginning - "I wonder what would happen if species x was crossed with species y". In fact this is no doubt the greater part of the reason why that first hybrid was made, way back in 1856; in other words a beginning of a great thirst for knowledge that was to gain more scientific purpose as it gained momentum.

After the first flush of success, hybridists found that among other things, they had a bonus in that hybrids for the most part had much more vigour and were easier to grow than their original parents.

As far back as 1874, F.W. Burbridge wrote that the hybrids then known were "Sufficient to show results for botanical science. By hybridisation and grafting we may prove the natural affinity of plants far better than poring over herbarium specimens - if not so quickly, with far greater certainty".

This train of thought still crops up from time to time, as does the point that the making of hybrids will help in the conservation of species. Both points have some basis of fact but the main truth is that hybrids are made because of a burning desire to create a new race of plants, a new strain to broaden the range that already exists. All this is padded out by other related factors: increased sales by producing something new, a desire to do something no one else has done and so on.

These factors have all played a part in the development of hybrids from species endemic to Australia. We will probably never know what prompted W. Schmidt to create Dendrobium Ellen way back in 1928, but whatever it was he certainly created a very pretty hybrid. Nothing new appeared on the scene until the registration of D. Pauline and D. Colin Potter, and others of similar ilk, including D. Australia which was probably the only true native hybrid from this group as the crossing is recorded as D. bigibbum X D. nindii (syn. toftii). However a much earlier registration in 1892 is D. Specio-kingianum made by Sir Trevor Lawrence of Dorking. Evidently at that time time D. X delicatum was not recognised.

Even as late as 1960 there was only one other registration from the section Dendrocoryne and this was the outstanding and now important hybrid D. Andrew Persson (D. speciosum X D. falcorostrum) and I doubt very much if the hybridisers realised just how important this hybrid was to become in future breeding. Up to this time there were a number of registrations in the sections Phalaenanthe and Ceratobium, although once again, on the whole, registrations were made by overseas hybridisers probably as novelty types. Notable exceptions being the crossing of D. nindii with D. discolor (syn. undulatum) = D. Peter Peterson and D. canaliculatum X D. bigibbum = D. Rosy Tips. Other registrations of note and repeated by Australian hybridisers were D. David Baver (D. johannis X D. bigibbum subvar. compactum), D. johannis X D. nindii = D. Tusco, D. Xsuperbiens X D. bigibbum = D. Saskia, D. Xsuperbiens X D. discolor = D. Albanense.

However if up to 1960 there was very little activity in hybridising native orchids, the next ten years saw a virtual eruption of activity with no less than about 50 registrations covering the genus Dendrobium, sections Dendrocoryne, Phalaenanthe, Ceratobium, Rhizomatous and the genera Sarcochilus and Rhinerrhiza.

Taking the latter first, it was interesting to note for the first time the appearance of Sarcochilus and Rhinerrhiza hybrids (the bi-generic Rhinochilus). In later years the demand for these became so great that I repeated many of the crosses and I find that as primary

continued p. 50.

Australian Native Orchid Hybrids. cont.

hybrids they are exceptionally easy to work with; besides being easily grown they flower quickly and freely. As yet I have not seriously attempted any second generation hybrids, concentrating on trying to produce as wide a range of primary hybrids for furure work instead.

For the first time in dendrobiums a deliberate attempt appeared to be made by Australian growers in the 1960's, to produce Phalaenanthe and Ceratobium hybrids using endemic species, many of these being very popular, such as D. Gloucester Sands, D. Judy Leroy and D. Rachelle Simpson. The fascinating thing about all of these is that by carefully selecting the various forms and varieties available, it is possible to raise three, or more, very distinct clones in the one hybrid. Two fascinating crosses made overseas during this period were D. Elsie Cox (D. Xdelicatum X D. Xsuperbiens) and D. Suzanne (D. bigibbum X D. tetragonum). Two very important crosses of part Australian origin also appeared during this period, the first being D. Lowana Nioka a cross made with D. canaliculatum and the New Guinea species D. antennatum. This cross intrigued me, so I tried to repeat it for myself with the Cape York Peninsula form of D. antennatum, the results not being very successful, as only a very few survived but the resultant plants proved to be compatible with other Ceratobium, Phalaenanthe and even Dendrocoryne orchids. In fact, one cross in flower at the time of writing has shattered all faith in myself as a predictor. I calmly assured everybody that the cross of(D. antennatum X D. canaliculatum) X D. bigibbum 'Hololeucum' (i.e. all white) would produce near white flowers with perhaps a touch of green. The results are so dark they could best be described as mauve-black. The second cross involved D. agrostophyllum, a species most of us believed to be compatible with the Dendrocoryne section but the crossing of this species with D. Tangold showed that its possibilities might lie more readily with the Ceratobium section. A trial crossing with D. Lowana Nioka proved the point.

Hybridisers during this time "discovered" D. kingianum and Bert Overall created the now famous D. Bardo Rose. It was followed by Ira Butler's D. King Rose and several other D. kingianum hybrids, including back crosses to D. Xdelicatum etc. A problem with D. kingianum crosses at this stage began to show up - second generation hybrids were extremely difficult and often impossible to make. At this time I also entered the D. kingianum arena and succeeded in crossing it with D. Andrew Persson to produce a wonderful range of hybrids. Of these we found one that was fertile and has so far accepted pollen from one of our D. Xdelicatum 'Kestevenii' parent plants. A series of crosses with D. speciosum 'Compactum' also surprised us with their quality and in particular, their colouration.

This period also marked the emergence of our first crossing in the Rhizomatous section. D. teretifolium var. fairfaxii X D. linguiforme which I named D. Virginia Jupp. This cross was so successful we crossed D. teretifolium with D. striolatum to produce D. Rosemary Jupp. Both these crosses showed that by careful selection we could produce very colourful, showy plants in this section, that had the added attraction of being extremely hardy. We have now produced second generation hybrids from these and have several more on the drawing board, as it were, to give us a wide range of clones for future work.

The end of the sixties era produced a wide range of hybrids with growers and hybridisers alike demanding and producing, hybrids from D. gracilicaule, D. speciosum, D. tetragonum & D. fleckeri. One of the most interesting developments was the use of D. tetragonum var. giganteum as a parent. For instance, D. Ellen was remade several times by Upton and Butler producing some lovely flowers that surpassed their elder sister in attractiveness. We visualised a cross of D. tetragonum var. giganteum with either D. speciosum or D. falcorostrum as being worthwhile and found that only the cross on D. falcorostrum developed; and on flowering, the results were all we could have hoped for - D. Star of Gold had arrived, and proved for us to be a fertile producer, we made several crosses with our best clone. Some now in flask have been pushed onto the fourth generation. A parallel cross of D. speciosum X D. tetragonum var. giganteum now appeared from another hybridiser (Ira Butler) and demonstrated just how valuable a parent this species is going to be in producing quality, combined with very well displayed flowers.

What of the future ? It has been demonstrated that by careful selection we can produce colourful, compact plants in almost all sections of the endemic dendrobiums and to a certain extent, in the Sarcanthinae, that are compatible with growing conditions in many, many areas of Australia. There is no doubt that in the future, if we can work from all that we have learned in the past, far better plants can be produced to add to our growing pleasure.

One thing is needed and that is more knowledge of a scientific nature, of the genetic side of our breeding programmes, but the cost is great of course, probably too great to get any results in the near future. However, it is pleasing to note that some work particularly on Sarcochilus is now being carried out at the University of New England, Armidale, N.S.W.

continued p. 51.

Australian Native Orchid Hybrids. cont.

This is a start - let's hope that other graduates in the future can undertake this kind of research.
Finally may I make a plea to all hybridisers and would-be hybridisers - not to fall into that vortexed syndrome of "let's make 'em big, round and beautiful". Instead keep them distinct and colourful with some attempt to retain their original characteristics.

Noel C. Jupp, Allynbrook Road, East Gresford. N.S.W.

FOOTNOTES TO NOEL JUPP'S PAPER.

Joe Betts

The following are crosses made within, or between the Phalaenanthe and Ceratobium sections:-

Dendrobium Pauline	= D. bigibbum X D. discolor	It was registered by Stuart Low of Sussex, England in 1932.
D. Colin Potter	= D. bigibbum X D. nindii	Registered by Dr. Lyon of Hawaii, in 1944.
D. Australia	= D. bigibbum X D. nindii	Registered by Nagrok of Java, (date not specified in Sander's complete list).
D. Peter Petersen	= D. nindii X D. discolor	Registered by J.L. Bourner of Cairns, 1956. A.W. Dockrill illustrates both this "garden hybrid" made by J.E. Jones (Limberlost, Cairns) and a natural hybrid collected on S.E. Cape York Peninsula, by D. Kingston in 1962 - in order to demonstrate the parentage of Kingston's plant. Readers will be interested to know that Dockrill describes D. nindii as "one of Australia's most beautiful orchids" - also that in this case, we seem to have a natural hybrid with a horticultural epithet but no botanical name.
D. Rosy Tips	= D. canaliculatum X D. bigibbum	Registered by W.B. Muir of Ayr, Qld., 1960.
D. David Baver	= D. johannis X D. bigibbum	Registered by L. Baver of Hawaii, in 1956.
D. Tusco	= D. nindii X D. johannis	Registered by W. Komatsubara of Hawaii, in 1957.
D. Saskia	= D. Xsuperbiens X D. bigibbum	Registered by G. Barendsen of Aalsmeer, Holland, 1951.
D. Albanense	= D. Xsuperbiens X D. discolor	Registered by P. Yahiro of Hawaii, 1958.
D. Gloucester Sands	= D. discolor X D. canaliculatum	Registered by K. Macpherson of Proserpine, Qld. 1963.
D. Judy Leroy	= D. canaliculatum X D. dicuphum	Registered by Limberlost, Qld., 1961.

The following crosses introduce the Dendrocoryne section into breeding with Ceratobium or Phalaenanthe sections:-

D. Elsie Cox	= D. Xsuperbiens X D. Xdelicatum	Registered by Mr. & Mrs. W. Osment of Florida, U.S.A. in 1961.
D. Suzanne	= D. bigibbum X D. tetragonum	Registered by A. Willessdorf of Mackay, Qld., 1965.

The following referred to by Noel Jupp as'of part Australian origin', are at least Australasian, as will be seen from the parentage:-

D. Lowana Nioka	= D. canaliculatum X D. antennatum (New Guinea form)	Registered by Limberlost of Cairns, 1962.
D. Tangold	= D.Constance (D. discolor X D. lasianthera from New Guinea) X D. Pauline (see above).	Registered by Limberlost, 1962.

Those interested in closer study of the Dendrobium sections should consult A.W. Dockrill's "Australian Indigenous Orchids" at p.383, for an account of the Dendrocoryne Section, and at p. 329 for the Rhizobium Section (which comprises only D. linguiforme, D. cucumerinum &

continued p. 52.

Footnote To Noel Jupp's Paper. cont.

D. wassellii). The species referred to by Noel Jupp as "Rhizomatous" (i.e. D. teretifolium and D. striolatum) are included in Dockrill's "Section 3", because "they lack rhizomes", although Schlechter included them in the Rhizobium Section. Dockrill preferred to leave the separate Section 3 without a name in order to avoid further confusion.

A note on Dendrobium Xgrimesii is perhaps necessary here. Dockrill (p.366) indicates that "this species almost certainly originated as a natural hybrid which had, as parents, D. teretifolium R.Br. var. fasciculatum Rupp and D. linguiforme Sw. var. nugentii F.M. Bail." The man made cross, D. Virginia Jupp, having parents D. teretifolium var. fairfaxii and D. linguiforme may therefore be eventually classified as D. Xgrimesii in the same way that D. Specio-Kingianum has now become D. Xdelicatum.

Some of our readers will know that D. Star of Gold (D. falcorostrum X D. tetragonum var. giganteum) was also made by Ira Butler, the first of his seedlings coming to flower very impressively shortly after his untimely death. The importance of this cross, to me, is that, apart from its very large flowers and strong colouring, it is entirely within the Dendrocoryne section, is a cool grower and has no D. kingianum in its genes.

Finally, perhaps the most heartening note for hybridists of our native orchids in the cool growing Dendrocoryne section is that Ron Kerr's specimen plant of D. Bardo Rose has achieved a breakthrough as a show bench orchid. It was awarded the first Highly Commended Certificate ever given to an Australian indigenous orchid. The award was made at the Fourth Australian Orchid Conference in Sydney last September and was confirmed subsequently by the Australian Orchid Council. So now we have a Dendrobium Bardo Rose 'Berowra' HCC, OS NSW- AOC.

The clonal name 'Berowra' was applied , of course, as a result of the award. I asked Ron Kerr the name of the hybridist responsible for this clone and he told me it is Bill Murdoch! The seedling was acquired by Ron from 'Wayside Nursery' at Port Macquarie and was labelled D. Ellen. When it became apparent that it could not be D. Ellen, a careful check back with the Cannons of 'Wayside' revealed there had been a mistake in labelling the seedling flasks!

Malaxis marsupichila W.T. Upton - Interesting Correspondence. cont.

fact I have only seen a green M. xanthochila, but this certainly does not mean there are not different coloured clones.

I would be most interested in seeing the flowers of the plant you have received from the McIlwraith Ranges.

The type specimen of Malaxis marsupichila was received by me together with 5 other plants in 1970, was drawn by me in that year and the three plants that I kept have flowered each year since, remaining quite constant.

The main differences in the floral characteristics of the two species are as follows. (made at time of comparison)

	M. xanthochila	M. marsupichila
Dorsal sepal	lanceolate	oblong to ovate - convex.
Lateral sepals	oblong or obovate obtuse	ovate to obovate - spathulate.
Petals	linear, truncate, pointing downwards	linear, furled out and reflexed backwards
Labellum	mid-lobe not distinct dentate	mid-lobe distinct rounded saccate.
Column	wings just extending above anther	wings extending well above anther.

Flowers of M. marsupichila are possibly slightly larger.

How good it would be John if other members of our Society entered this discussion, there are. I am sure, many members who must have seen both the new species and Malaxis xanthochila and perhaps with much more investigation we may find that the two species have hybridised naturally, or, although I can't see how, are conspecific. I was most reticent in the first place to name this species, but after considerable investigation over the last 5 years, decided to do the right thing by the species and not let it stay an unknown.

There are many points of discussion on so many of our native species of orchid that could well benefit us all if we would only bring our thoughts and knowledge to the fore in our joirnal "The Orchadian".

With kindest regards,
Yours sincerely

Walter T. Upton.

THE ORCHADIAN

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NEW COUNCILLORS.

It is with considerable personal regret that I must inform members that Norm Hilliger has relinquished the position of Hon. Secretary of The Society. To enable the present tremendous work flow to continue undiminished, your Council was fortunate in having a capable volunteer in the person of Keith Edwards to step into the position. You will also note that we have two new Co-opted Councillor's in Phil Collin and Garry Wells, both of whom have long associations with native orchids and will bring a most welcome flow of new ideas to The Council.

ANNUAL GENERAL MEETING - 25th. September, 1976.

Don't forget this important engagement. Put it in your diary now! By special arrangement with the Director of The Royal Botanic Gardens, Sydney, we will be holding our A.G.M. at the Herbarium, at 10.00 a.m. to be followed by a conducted tour of the Herbarium and glasshouses under the guidance of Mr. Don Blaxell.
Please advise us immediately if you intend attending, space will be limited so act now!

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FLASKING SERVICE.

Following our offer to subsidise the flasking of native orchid seeds we received a pod of *D. dicuphum* from a member. Good germination was achieved and Council decided to arrange for a group of 7 members to deflask our share of the seedlings. This was done on Sunday, 25 July 1976. Each member will use a different growing medium and the conditions of growing will vary as between members. Peter Vaughan has volunteered to keep records of progress.
D. dicuphum is not an easy subject to cultivate and it is hoped that we shall eventually have some worthwhile results for publication in The Orchadian.

THE ORCHADIAN - 14th. YEAR OF PUBLICATION - 5 VOLS. 53 ISSUES. 674 PAGES OF INTFREST.
ALL COPIES STILL AVAILABLE FROM A.N.O.S.

A NEW COMBINATION FOR AN AUSTRALIAN ORCHID.

David L. Jones

Pterostylis X ingens (H.M.R. Rupp) D.L. Jones comb. nov.
P. acuminata R.Br. var. ingens H.M.R. Rupp, in Proc. Linn. Soc. N.S.W. 58: 223 (1933)

This new combination has been made to remove Pterostylis X ingens from any association with P. acuminata R.Br. The two are entirely unrelated species and the old nomenclature has caused confusion since 1928.

Pterostylis X ingens is a natural hybrid between P. nutans R.Br. and P. falcata R.S. Rogers and is often found growing with, or in proximity to, both parents. It prefers swampy or semi-inundated ground in the manner of P. falcata. Hybridisation may be common and in some areas there are suggestions that backcrossing and segregation occur with the formation of hybrid swarms. As a result P. X ingens is an orchid variable in many characteristics. For an illustration of this see the bewildering array delineated by Nicholls from Victorian and Tasmanian material [2]

P. X ingens is a Spring-early Summer flowering species, extending from extreme southern N.S.W. (around Carabost [1]) to Victoria and Tasmania, with an old record from Port Elliot in South Australia. It is generally large and robust and may flower from a basal rosette, or have a number of leaves scattered up the stem in the manner of P. falcata. The galea varies in size from 30 - 45 mm. and may be inflated at the base, giving the flower a bloated appearance. The flower itself often has a pronounced nodding aspect due to the influence of P. nutans. The labellum varies from 22 - 30 mm. long and has a prominent scabrous-pubescent surface and and an elongated obtuse apex.

Pterostylis acuminata is a well defined species extending from southern N.S.W. through Queensland into New Guinea and possibly New Caledonia. It is an Autumn-early Winter flowering species in N.S.W. usually flowering from a well defined rosette. The galea varies from 20 - 30 mm. long, is erect or slightly nodding and is usually green, or in the case of New Guinea specimens, reddish. The labellum varies from 12 - 18 mm. long and has a glabrous surface with an acuminate apex. There is no suggestion that P. acuminata has arisen from hybridisation; rather it is a widespread and defined species that seems to have evolved and stabilised over a considerable period.

Rupp seems to have made numerous references to P. X ingens in literature, the first being in 1926, when he discussed specimens received from Tadgell and Nicholls [8]. In this article he noted the differences from P. acuminata as being - the Spring flowering period; the robustness; the shorter, thicker, blunter, lateral sepals and the prominent stem bracts.

In 1928 he described the variety, but without a Latin description [4]. This was furnished in 1933 [5].

Rupp rejected any suggestion of hybrid status in an early article [8] but seems to have been swayed by Nicholls comprehensive coverage of the variations involved [2]. Nicholls in his book states "Since describing the variety ingens Rev. Rupp is of the opinion that this Victorian plant is sufficiently distinct to warrant recognition as a species". [3] Neither however, took any further action on the nomenclature of this orchid.

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David L. Jones.

ANTIPODEAN ADVENTURES.

Graham & Chistopher Lovell.

To persons who have long loved our British orchids and hopefully, are beginning to understand something of their culture, some illustrations of Australian terrestrial orchids seemed to open up a whole new world of possibilities.

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Antipodean Adventures. cont.

This was a strange world, and for any link with our native orchids we would have to turn aside from our more showy *Orchis* and *Ophrys*, and consider our humble *Listera*, whose tribe has become so amazingly diversified and glorified beyond belief in Australia.

Next came the quest for living material. Overtures we made to one of your orchid dealers elicited the opinion that "terrestrials" were not a commercial proposition and, anyway, pretty ungrowable. However, one thing led to another and contact with a few enthusiastic amateurs led to the arrival of little packets, containing small tubers or plants.

First came *Pterostylis*; *P. pedunculata* soon settled down to make a panful of crinkly leaves and to flower in due course. It has now made a reasonable cabbage patch of growth and has flowered regularly for three years. Next came a *Thelymitra*, in growth, which went on to produce some charming pink flowers closely resembling a picture of *T. chasmogama*; it is still with us in somewhat reduced state, as we were then having some compost troubles. Later came *Glossodia minor*, buds just visible, which made an entrancing picture when the flowers developed. These appear to be making heavier weather of their adaptation to our hemisphere, but somewhat diminished plants are still with us. Alas, we lost with amazing rapidity, *Caladenia carnea* and *C. deformis*, which made no real growth. We must rectify this if possible, especially as *C. latifolia* is settling down well.

Diuris received as dry tubers, seemed very unresponsive, but after a long wait we have some useful looking leaves from 3 species *Diuris sulphurea*, *D. aurea* and *D. punctata* var. *alba*. *Corybas fimbriata* seems fairly happy, regularly producing a potfull of little heart-shaped leaves and increasing, no flowers as yet.

Eriochilus cucullatus also produces leaves only, so far.

Chiloglottis reflexa grows well and has flowered. A single tuber of *Calochilus paludosus* produces a leaf each year and seems to be getting a little bigger (We would particularly like more of that ilk !)

Now for some really good growers. *Cryptostylis erecta* and *C. leptochila* after a period of meditation began to elongate their very business-like roots and make clumps of leaves. *C. erecta* has flowered twice and deserves our own personal award of merit.

There have been other *Pterostylis* of course, mostly showy and willing; for vigour *P. curta* is runner up to *P. pedunculata*.

We will probably do better with these fascinating subjects in future as our earlier attempts provided near hardy conditions, now however; we are promoting our Australians to a cold house, with just enough heat to exclude frost. Here there are jumbled together South African bulbs, a few South African and Chilean orchids and it is here that *Caladenia latifolia* is deigning to produce leaves (at last!).

Perhaps a few comments on our methods of cultivation and propagation might be of interest. For tender terrestrial orchids we use plastic pots and a compost originally designed for epiphytic orchids, namely 2 parts lumpy peat, 1 part chopped sphagnum moss and 1 part polystyrene chips. "Lumpy peat" is derived by sifting commercial sphagnum peat and rejecting the fine part. To this base may be added a small amount of friable loam and some grit. Limestone lovers can add bits of spar, limestone or cuttlefish bone. This compost ensures plenty of air spaces, essential for the cultivation of any orchid.

Having established terrestrials in cultivation one's next move must be to propagate them. Many Australian genera such as *Pterostylis* do the job very diligently, however other genera, including many species of *Ophrys*, refuse to increase vegetatively, relying entirely on seed propagation in their native habitat. We have found it possible to produce at least one extra tuber by detaching the main new tuber while the plant is still in growth. If the plant is kept in growth as long as possible, at least one new tuber is formed. This technique has proved effective in our hands with *Ophrys*, *Dactylorhiza* and *Orchis* species. We have tried it once with *Eriochilus cucullatus*, a species which rarely appears to increase vegetatively; one attempt was successful. The stout hearted can try cutting a tuber in half, each half posessing part of the shoot. This method is *not* to be recommended for the rarer species, but we have produced two *Dactylorhiza fuchsii* tubers for the price of one.

As, doubtless, all readers of The Orchadian, are already aware, raising terrestrial orchids from seed is no easy task. Each seed pod contains many millions of seeds and a mutual mycorrhizal relationship with a fungus is necessary for germination. This complex event is difficult to control in cultivation and attempts have been made to circumvent it. Growers of epiphytic orchids use the Knudson formula, a cocktail of trace elements with agar. Tradition has it that terrestrial species cannot be germinated by this technique, but I believe one or two growers are proving tradition wrong. It would be of great interest to hear of experiences with Australian species. Again in the laboratory it is possible to sow seeds on an agar

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Antipodean Adventures. cont.

plate inoculated with the appropriate fungus. For most European orchid species the fungus species is Rhizoctonia "T". A local mycologist has successfully germinated two species of Dactylorhiza using this fungus and we are at present attempting other species.
A more haphazard method is to sow the seed around the parent plant, or around other orchid plants. If one's garden is not too well organised, self-sown seedlings may appear. Thus Orchis mascula has sown itself around an apple tree in our garden and plants of Spiranthes autumnalis flower in different parts of the lawn, the prostrate rosette of leaves being as immune as any daisy to the lawn mower! It is worth sprinkling seed over pans of Pleione spp. Previously, growers recommended sowing seed on patches of lawn-grown alpines, apparently orchids like the company of a tangle of roots. Probably these last methods, although risky, are at present the most suitable for the amateur gardener.
Of course, the most difficult part of terrestrial orchid growing is obtaining the plants in the first place. Large-scale digging up wild plants is irresponsible and should be heartily discouraged. Fortunately in Britain, there are one or two nurserymen who are employing means of propagation and thus distributing European species. Very few species from the Southern Hemisphere are commonly in cultivation in Britain and presumably the reverse applies.
Acclimatisation is a problem that tests the grower's patience. Tubers imported in a dormant condition may remain so for six months, or longer. Generally we keep them dry in a sealed, slightly inflated polythene bag. Plants received in growth appear to establish more rapidly, although care must be taken not to pack them in too damp a material. Better a desiccated small plant, than a sodden mass!
Although our experience of Australian native orchids is, as yet, limited, we are encouraged to attempt further species. We shall be delighted to exchange ideas and material with any growers in Australia. It is essential that we try to preserve these plants in cultivation as they become increasingly threatened in their native habitats.

Graham & Christopher Lovell, 100 Wridgeway, Long Ashton, Bristol, BS1894A, England.

A CRITICAL REVISION OF SOME SOUTH AUSTRALIAN NATIVE ORCHIDS.

A critical revision of South Australia's less well known orchid species has indicated that many of them will be placed under other species. The complete revision will not be completed until 1977, but some of the more obvious changes are made here-

Reclassification of Prasophyllum rotundiflorum Rogers.

Prasophyllum rotundiflorum Rogers Trans. Roy. Soc. S.A. 33 (1909) synonymous with Prasophyllum odoratum Rogers. The type specimen of Prasophyllum rotundiflorum is the only specimen under that name at the Adelaide Herbarium. A close examination reveals it to be an insignificant plant, well within the range of variation of Prasophyllum odoratum Rogers. Rogers originally separated it from Prasophyllum odoratum on the basis of colour and size, and the fact that in Prasophyllum rotundiflorum there was ' a tendency for sepals and petals to converge at their tips to a point.' These differences appear to be of small importance as the flowers are morphologically identical.

R. Bates & J. Weber, Adelaide Herbarium 30 th. April, 1976.

Reclassification of Thelymitra urnalis FitzG.

Thelymitra urnalis FitzG. synonymous with Thelymitra rubra FitzG.
From FitzGerald's original descriptions in the Gardener's Chronicle, April 15th. 1882, the only differences are in colour 'petals yellow and sepals yellow inside, dark red brown outside' for Thelymitra urnalis and 'flowers ....bright red' in Thelymitra rubra.
Secondly, Thelymitra urnalis is described as having column wings 'enclosing the column for more than half its length at base to form a cup with a central spur.'
Anyone familiar with Thelymitra rubra will realise that while still in bud, most flowers have yellowish petals with sepals yellowish inside, red-brown outside and the partly-formed column wings still enclosing half the column.
The fact that FitzGerald collected specimens for descriptions of both from the same location on Mt. Lofty, in South Australia and that Thelymitra urnalis has not been collected

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A Critical Revision Of Some South Australian Native Orchids. cont.

there since, indicate that he described Thelymitra urnalis FitzG. from immature specimens of Theymitra rubra FitzG.

R. Bates & J. Weber, Adelaide Herbarium (30 th. April, 1976.)

Footnote: No type specimen of Thelymitra urnalis exists and the Adelaide Herbarium has no specimens under that name. The illustration on page 40 of Nicholls' 'Orchids of Australia', though of an unusual colour, is morphologically the same as Thelymitra rubra FitzG.

Reclassification of Pterostylis vereenae R.S. Rogers.

Pterostylis vereenae R.S. Rogers Trans. Roy. Soc. S. Aust. 38: 360 (1914), synonymous with Pterostylis foliata Hook.f. Flora. N.Z. 1: 249 (1853).

Pterostylis vereenae is described by Rogers as having a ' radical rosette' of leaves, whilst Hook.f. described Pterostylis foliata as having only 'stem leaves.' The remainder of the descriptions of both species is basically the same. Rogers's original mistake probably arose through assuming that Ptersotylis foliata never formed a radical rosette. This is not the case.

Many populations of Pterostylis foliata can be found with a graduation of plants with leaves from basal rosette to stem leaves only.

R. Bates & J. Weber, Adelaide Herbarium,(30 th. April, 1976.)

Footnote: The Tasmanian plants labelled Pterostylis vereenae may represent a separate species.

Pterostylis falcata Rogers, in South Australia.

An examination of all South Australian specimens labelled Pterostylis furcata Lindl. in the Adelaide Herbarium, reveal them to have been wrongly identified. They all in fact, represent Pterostylis falcata Rogers.

It is assumed that Pterostylis furcata does not occur in South Australia.

R. Bates & J. Weber, Adelaide Herbarium, (30 th. April, 1976.)

New Recording for South Australia.

Prasophyllum despectans Hook.f. has been found in large numbers in Woods & Forest Dept. Reserve, at Glencoe, in the south east of South Australia. This represents a new record for that species in South Australia, (April, 1976).

R. Bates, Adelaide Herbarium, (3o th. April, 1976.)

RAISING AUSTRALIAN TERRESTRIAL ORCHIDS FROM SEED.

L.T. Nesbitt.

My methods of seed raising have evolved over the last 7 or 8 years. In the first year, I attempted to grow cymbidiums and cattleyas from seed. After a series of failures with various flasking methods I became fed up with all the rigmarole involved. Then a few self sown seedlings of Thelymitra and Pterostylis germinated amongst my flowering plants. This seemed very easy, so I began to hand pollinate the flowers of terrestrial species, and harvest the ripe seed. This seed was sprinkled on top of pots containing adult plants and next season several pots were filled with seedlings.

From this point on, I became a devotee of Australian native terrestrial orchids and I madly pollinated every plant which flowered. I have had many disappointments over the years but, with the help of a few local and interstate friends, a reasonably reliable technique has been established.

My original orchid houses were built for cymbidiums, Cattleya and slipper orchids. My first native terrestrials were grown in the Cymbidium flowering area under a glass leanto roof, on one side of the shadehouse.

These pots required hand watering all the year-round. The surface layers sometimes dried out on sunny days in Winter-Spring, which was bad news for small seedlings. I recommend growing terrestrials under shadecloth which gives better results and involves less work than growing them in a glasshouse.

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Raising Australian Terrestrial Orchids From Seed. cont.

For plants in plastic pots under shadecloth, hand watering is unnecessary in winter in Adelaide, but must be resorted to in autumn and spring, and occasionally in summer. Terrestrials are very sensitive to fluctuations in soil moisture content and this fact must be constantly kept in mind. I use 52% shadecloth and all pots are on galvanised weldmesh benches at least 18" above the ground, to deter slugs and snails.

Most of my non-colony type plants are in 5" plastic pots, but I am gradually changing to 6" and 7" squat plastic pots to reduce watering in spring. Watering must be done gently to prevent erosion of the surface layers of soil where the seedlings may be developing. I have been working on this erosion problem for years. I tried lowering the shadecloth to a foot or so, above the pots to prevent erosion from rain drops, but this was no better than a shadecloth roof you could walk under. Some means of binding the surface was needed. A good medium is native moss, but it can take a season to establish and in the third or fourth season the moss gets too thick and smothers the seedlings. This means repotting every three years, or so. I now use a thin mulch of chopped needle-like leaves. She-oak leaves are excellent, but are hard to get in quantity, so I make do with radiata pine leaves which are satisfactory.

Watering must be done with a fine spray which is very time comsuming when done by hand. The pots must never be filled so that they overflow, or the seed will float away. I use tap water and sprinkle the pots after sunset, so that the plants can soak up moisture over night. Watering during the day in warm spring weather often leads to damping-off problems.

I mix my own soil to suit each species. The basic ingredient is grey soil from the Adelaide hills. Orchids will grow in this alone, but as it has a high clay content, water lies on the surface for several hours after rain. To overcome this problem, I add 10 - 15% sand to the mix to improve drainage. This mixture dries out too fast in spring, so I add peat moss to retain moisture. 10% for Caladenia, Diuris and Thelymitra; 25% for Pterostylis and Acianthus; and up to 50% peat moss for Corybas. I have added a very small amount of blood and bone, and complete fertiliser to this mix in recent years. I use half-inch gravel crocking in all pots and then fill with the appropriate soil mix, which is sieved to 3/16" size beforehand. This makes repotting easy as the old soil can be tipped into a sieve and it all falls through, leaving the larger tubers and crocking behind.

Pots used for seed raising are topped with a thin layer of rotted gum tree material, sufficiently thick to just cover the soil. I believe this rotted wood, which is obtained from old hollow trees, or rotted stumps, provides food for one, or more fungi, which assist seed germination. I have raised seedlings of 26 South Australian terrestrial species to date. Some species give excellent results, others have so-far, been unsuccessful, but generally speaking I find if a large plant is growing well, then at least a few seedlings are obtained yearly. It takes only a few minutes to hand pollinate the flowers and later you can sprinkle the seed over the pot, where it eventually washes down into the surface layers.

Multi-flowering plants, such as Thelymitra aristata should be allowed to bear 3 or 4 pods only, otherwise they may not flower the following year.

Seed may be sown from October to June. I prefer to store my seed in paper envelopes through the summer, and sow in April - May, to minimise loss of seed. Germination takes place in the cool wet winter months and protocorms must not dry out during the subsequent 2 - 3 months. The first leaves are generally seen in July. Others appear through the spring months, but as the weather gets hotter in October and November, damping-off becomes a serious problem. It is better to let the pots dry out once the mature plants enter dormancy and sacrifice these late seedlings than to keep watering and have all the plants in the pot rot away.

I prefer not to disturb the seedlings until they have completed two growing seasons, as they make very tiny tubers about the size of a pin head in the first year. A new crop of seedlings can be grown each year in the same pot. Because the larger seedlings form tubers deeper in the pot than small ones, the biggest tubers can be separated by pulling off the lowest inch of soil during the dormant period. The remaining plug of surface soil containing the small tubers can be replaced undisturbed into the pot, on top of an inch of fresh soil mix. The larger tubers are then replanted in new pots.

I have flowered seedlings of Pterostylis nana in the second year but generally seedlings take 3 - 5 years to reach flowering size under my growing conditions.

In my experience it is a waste of time trying to germinate seeds on pots of soil which don't contain at least one living plant, even though the soil, preparation, housing etc., is identical. I sowed various species on over 200 pots of soil mix, for two consecutive years and all I got was a half dozen seedlings of Pterostylis nana in one pot. The seed and plant

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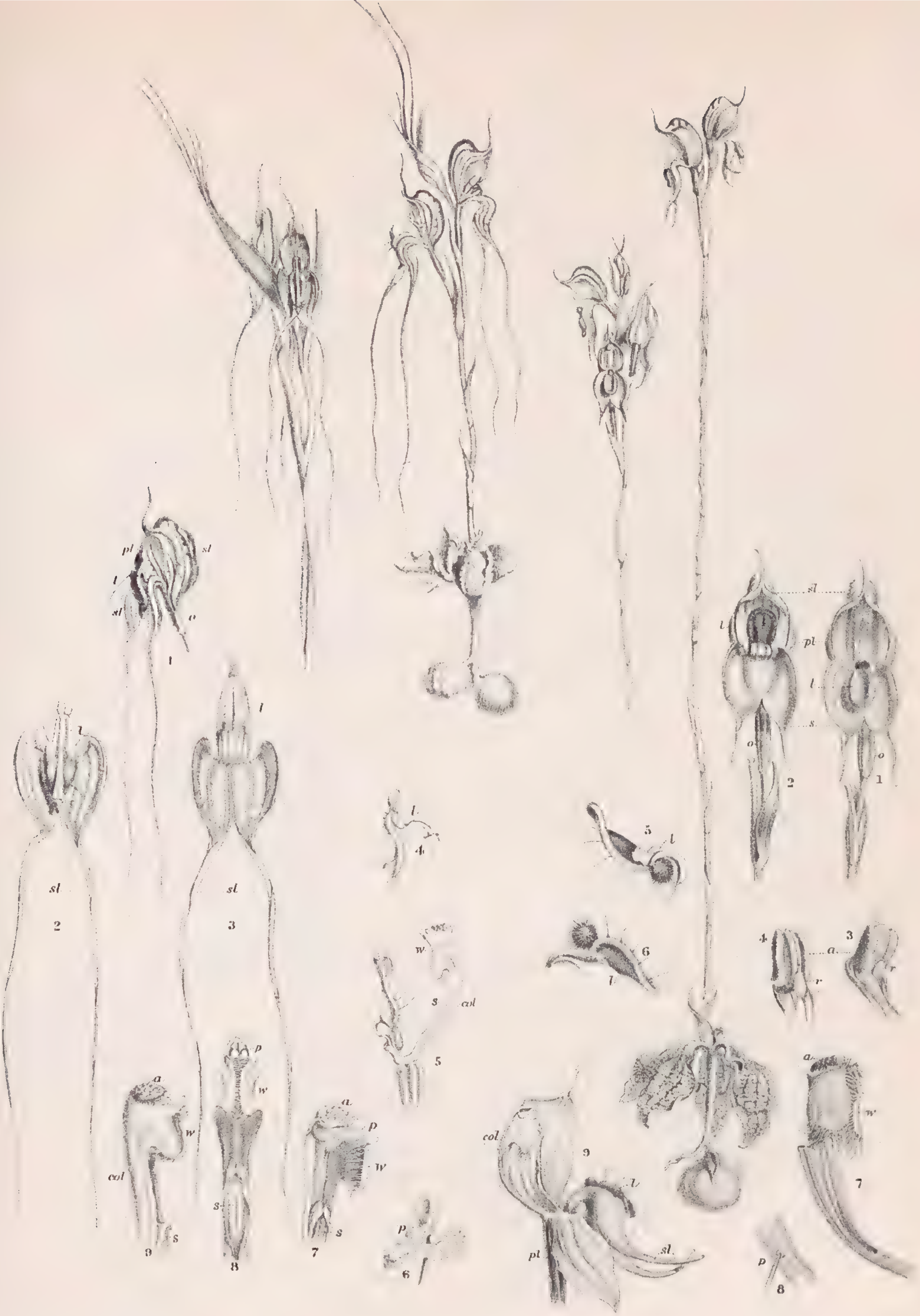


From Nature by R.D.FitzGerald F.L.S.

On Stone by Arthur J. Stopps.

PTEROSTYLIS

Woollsii

Rufa

Sydney, N.S.W, Thomas Richards, Government Printer.

Pterostylis rufa *(R. Brown)*. Pterostylis Woollsii *(Fitzgerald)*.

Pterostylis rufa is by no means a common Orchid in the neighbourhood of Sydney, belonging rather to the flats nearer the Blue Mountains.

P. Woollsii cannot be included in any of the varieties of *P. rufa*, as given by Bentham in the "Flora Australiensis," and should, in my opinion, be ranked as a distinct species. I have therefore named it as such, after my friend, Dr. Woolls, who has contributed so largely to the knowledge of the Botany of New South Wales, and who kindly sent me specimens discovered by him growing in the neighbourhood of Richmond, and from which the figures have been taken. The only other locality from which I have since received it has been from Boorowa, from Mr. G. H. Sheaffe.

The varieties of *P. rufa*, as given by Bentham, are *gibbosa*, *squamata*, and *Mitchelli*; *gibbosa* said to be "merely a tall-growing, luxuriant state of the typical, short-pointed form," *squamata* to be "a small-flowered variety, with short points," and *Mitchelli* to have numerous cilia on involved margins of the labellum, the maximum length of the lower sepals being given as from three-quarters to one inch.

A glance at the figure opposite will, I think, be sufficient to convince the reader that *P. Woollsii* cannot be placed under any of such varieties.

The most remarkable distinctions are as follow:—

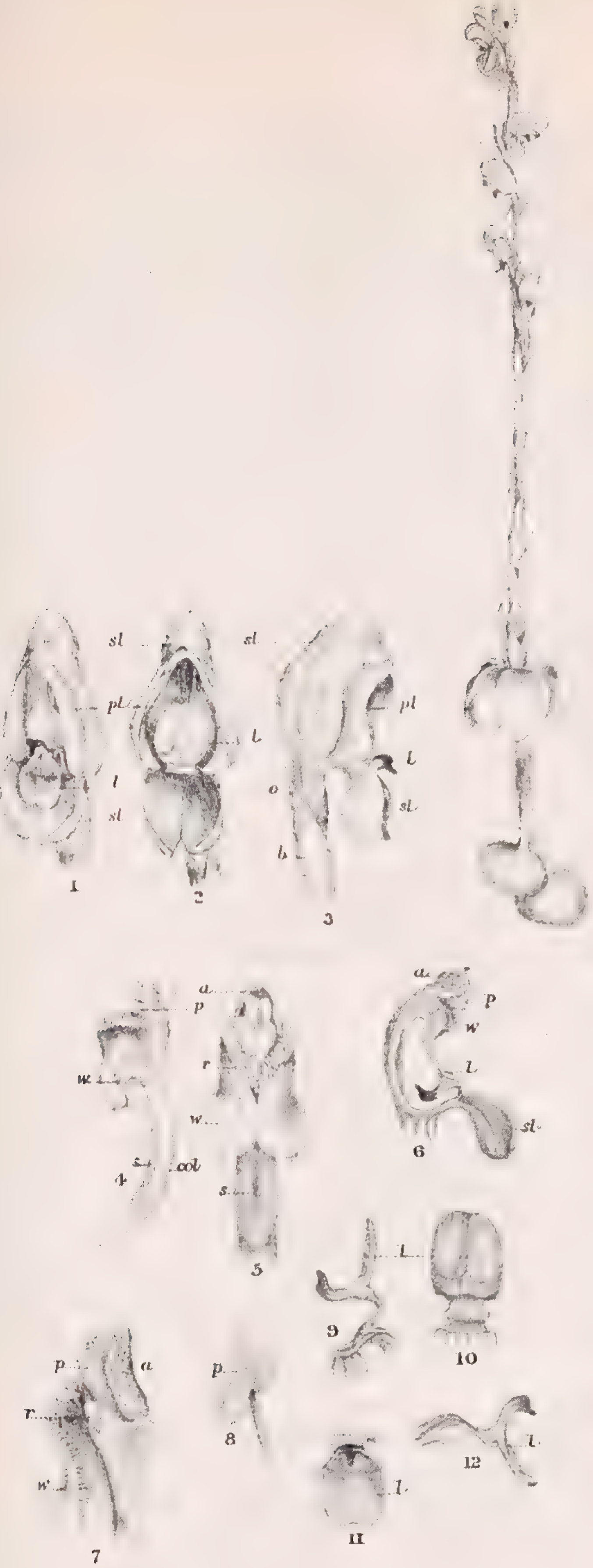
Pterostylis Woollsii.	*Pterostylis rufa.*
Bracts leafy.	Bracts scale-like.
Large sheathing bract beneath the flower, enclosing it when in bud.	Small sheathing bract beneath the flower.
Tails to the lower sepals two and a half to three inches long.	Points to lower sepals from one-eighth to one-quarter of an inch.
Labellum lingulate.	Labellum ovate.
Appendage lingulate with a few hairs at the end, a second lingulate appendage on the centre of labellum near the point.	Appendage globular, covered with hairs; no second appendage on the labellum.
Wings of column short and blunt; small point at the upper angle, well defined.	Wings of column square, point at upper angle not well defined, passing into the cilia.
Stigma forms at the top a bifid hood.	Stigma at the top simply channelled.
Anther very short and rugose.	Anther longer and smoother.

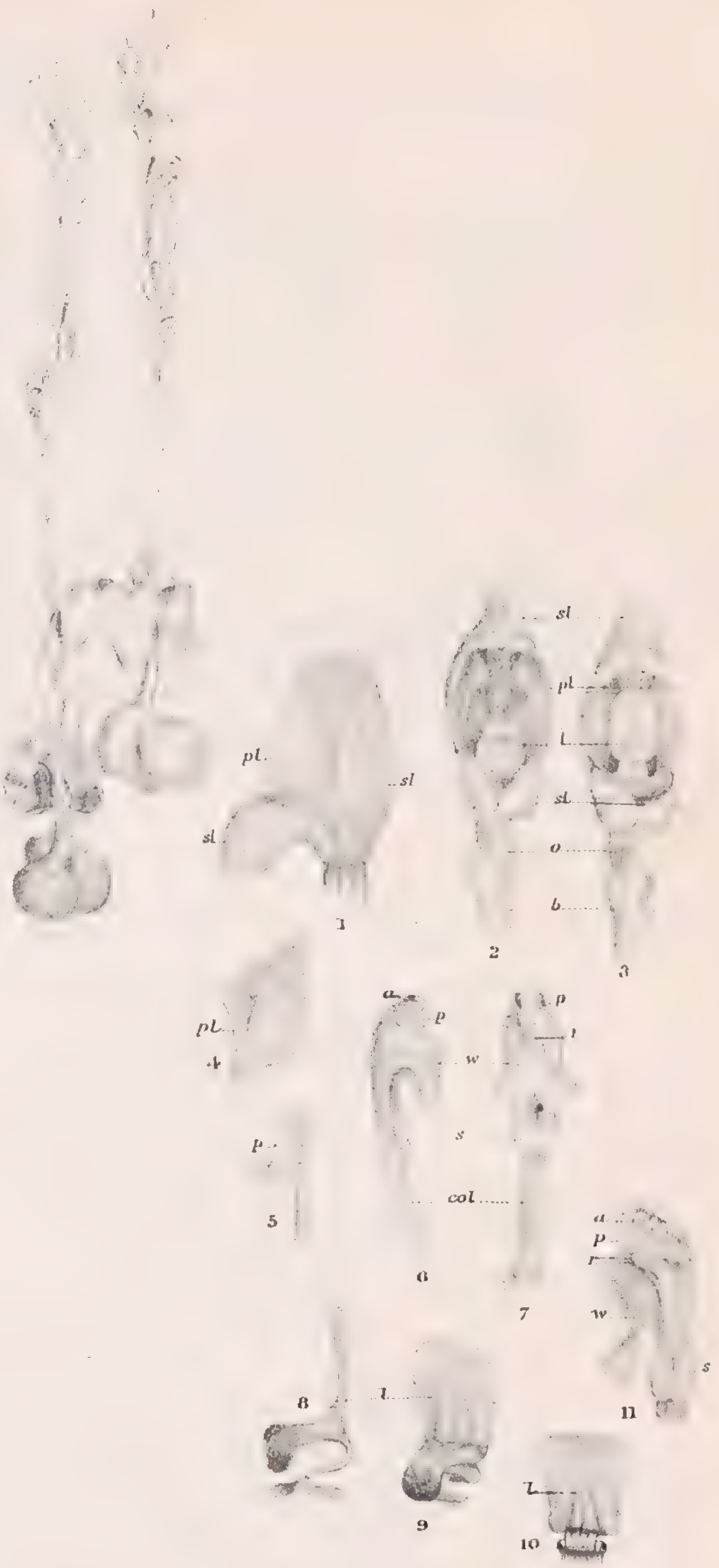
In both species the labellum is highly sensitive, closing the flower at the slightest touch. Both flower in October and November; the leaves, which when young are a smooth, bright green, having become yellow and withered.

EXPLANATION OF PLATE.

Pterostylis Woollsii. Fig. 1. Flower from the side, labellum dependent. 2. Lower sepals and labellum, labellum dependent. 3. Lower sepals and labellum, labellum erect. 4. Labellum, from the side. 5. Column and labellum, from the side, labellum erect, sepals and petals removed. 6. Pollen masses. 7. Top of column, showing part of stigma, one wing removed. 8. Column, from the front. 9. Top of column, from the side.

Pterostylis rufa. Fig. 1. Front view of flower, labellum dependent. 2. Front view of flower, labellum erect. 3. Top of column, wings removed. 3. Top of column, anther thrown back, and pollen masses removed. 5. Labellum, from the side, erect. 6. Labellum, from the side, dependent. 7. Column, from the side. 8. Pollen masses. 9. Side view of flower, half of dorsal sepal removed, and one petal turned down.





From Nature and on Stone by R.D. Fitzgerald F.L.S.

PTEROSTYLIS

Cycnocephala

Mutica

Sydney, N.S.W., Thomas Richards, Government Printer.

Pterostylis cycnocephala (*Fitzgerald*). Pterostylis mutica (*R. Brown*).

In the present state of the science of Botany, while the question of the mutability of species remains undecided, it appears to me to be a matter of the greatest importance to the botanist to endeavour to determine whether approximate forms pass into one another,—keep constant to their present slight divergence,—or depart more and more from each other. The objection, so often raised against the Darwinian theory, in the form of a demand that any absolute (that is, present or recent) alteration in species be pointed out, can only, it seems to me, be answered through such investigation and determination as to whether the form called a variety reproduces the form called a species. At this point must the truth, either one way or the other, be proved or disproved, in part through relics of the past, but more determinately in the future; though the time may be long indeed before sufficient proof can have accumulated. The first step towards such proof must be through the most accurate description or careful delineation, so as to stereotype present forms for future comparison; and the forms best suited for the purpose are those that, generally resembling each other, differ on some one specific point. The salient point of difference between the species (?) figured on the opposite page is, that in one where the labellum closes the flower the point of the appendage to the labellum turns down into a little hollow just large enough to receive it; in the other, it turns up. It would be easy to include both under one name and species, by inserting in the description such words as "appendage variable, either turned up or down"; but does the one form ever produce the other, and if not, why should they be forced together by a union only in name? On the other hand, if they were once the same and there has been a variation that does not relapse into the original form, is not the variety a new species? or in what respect is it not a new species? though, of course, both can be included under the one name, and the departure lost sight of by an extension of the specific description, which is nothing more than a begging of the question; unless it be ascertained that with or without change of soil or climate the one relapses into or reproduces the other.

The form to which I have given the name of *Cycnocephala*, from the likeness of the appendage of the labellum to the head and neck of a swan, seems to belong to the country to the west of the Coast Range; the only places I have yet received it from being, in the first instance, from Dr. Ross, Molong, and subsequently from Mr. Sheaffe, Boorowa.

The form *Mutica* appears to be generally distributed on the East coast, and is found in Tasmania.

The leading points of distinction are as follow:—

Pterostylis cycnocephala.	*Pterostylis mutica.*
The point of the appendage to the labellum abruptly acuminate, and turned up when the labellum closes the flower.	The point of the appendage to the labellum is thick and blunt, and turned down (when the labellum closes the flower) into a depression suited to receive it.
The labellum is ovate emarginate.	The labellum rhomboidal emarginate.
The stigma cordate, the point turned upwards.	The stigma ovate.

Both figures are of plants rather below the average in size. The finest specimen I have seen of *Cycnocephala* bore twenty-four flowers. In both species the labellum is extremely sensitive, closing the flower on the slightest touch.

EXPLANATION OF PLATE.

Pterostylis cycnocephala. Fig. 1. Front view of flower, showing labellum dependent. 2. Front view of flower, showing labellum erect, closing the entrance. 3. Side view of flower, labellum dependent. 4. Column, from the side. 5. Column, from the front. 6. Side view of column, with lower sepals and labellum, dorsal sepal and petals removed. 7. Upper part of column, from the side, one wing removed. 8. Pollen masses. 9. Labellum, from the side, erect. 10. Labellum, showing under side, erect. 11. Labellum, showing upper side, dependent. 12. Labellum, from the side, dependent.

Pterostylis mutica. Fig. 1. Side view of flower. 2. Front view of flower, showing labellum dependent. 3. Front view of flower, showing labellum erect, closing the flower. 4. Inner side of petal. 5. Pollen masses. 6. Column, from the side. 7. Column, from the front. 8. Labellum, from the side, erect. 9. Labellum, showing upper side, erect. 10. Labellum, showing under side, erect. 11. Upper part of column, from the side, one wing removed.

Raising Australian Terrestrial Orchids From Seed. cont.

do not have to be of the same species, or, even the same genus. Several species will sometimes germinate around one mother plant. I suspect that the presence of suitable fungi is the key, but I have not proved this yet.

The greater the number of pots sown with seed, the better the results. I look after pots which "strike". I can now reliably raise hundreds of seedlings annually of Diuris maculata and Caladenia dilatata. Others look promising, especially the local Caladenia species.

The main causes of loss of seedlings are; soil drying out excessively, slugs & snails, and damping off. These must be continually guarded against. Other less serious problems here are grubs, red spider, thrip, black birds and erosion.

I have concentrated my seed raising efforts on those species which do not readily form colonies. These include Diuris, Eriochilus, Thelymitra, Glossodia, most Caladenia, and some Pterostylis. The colony types such as Pterostylis, Acianthus and Corybas multiply vegetatively at a satisfactory rate, making seed raising unnecessary, although most of these are easy to raise from seed and reach flowering size comparatively quickly. I have found that approximately 10% of my adult non-colony terrestrials are lost each year from a variety of causes. Propagation from seed seems to be the most practical method of multiplying these losses. Many other species of Australian terrestrials will no doubt respond to these seed raising methods. Tubers and seed of interstate orchids are virtually impossible to obtain here in South Australia, with the exception of the more common Victorian species available through the tuber bank of A.N.O.S. Victorian Group, and afew Queensland species available commercially. There is much work still to be done.

To summarise, in my opinion the main requirements for successful germination of terrestrial orchid seeds under pot culture, in order of importance are;

1. Fertile seed.
2. Healthy adult plants.
3. The correct fungi and food to nourish it.
4. The soil surface (and hence any protocorms) must remain moist at all times, in the growing season (June to September - October).
5. Some form of thin covering to protect the protocorms from rain splash, or watering, must be provided.
6. Plants must be grown in pots which are on benches, clear of the ground, to discourage slugs and snails.
7. A growing area protected from strong winds, hail, birds, cats and dogs, small children etc., and in some cases, bright sunlight. A shadecloth shadehouse is best.
8. Weeds must be eliminated from pots of terrestrial orchids.
9. Water gently. Never allow water to fill the pot and run over the rim.

This is a method for raising terrestrial orchid species from seed, but importantly, it is unsuitable for hybrids, because of the uncertainty of identification of resulting seedlings. The tiny dust-like seeds can be easily varied from one pot to another by wind or rain. Germination on agar in flasks, must be used for seeds of hybrid orchids. The staff of the Canberra Botanic Gardens have written several papers on this subject, which can be consulted by those interested in flasking.

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Orchids Common To North Queensland & South Eastern Australia. cont. from Vol. 5. No. 4.

The north Queensland plants are clearly distinctive in the greater labellum curve, colour, size and the proportionately longer, narrower flower and are isolated from the southern plants. This is not true of Rupp's rather doubtful variety, which to my knowledge, has not been found since, in either N.S.W. or south Queensland.

Sarcochilus ceciliae F. Muell. is distributed from the Hawkesbury River north, but is very rare in the southern extremity of its range (a pressed specimen from Kulnura, near Wyong, is in the N.S.W. National Herbarium). It becomes more common in northern N.S.W. and southern Queensland, and it extends to north Queensland. Tropical plants have slightly larger, more deeply coloured flowers. These are confused at times with a related species S. roseus (Clemesha) Clemesha, but the structure of labellum at once separates them and they differ also in other points, including column differences. S. ceciliae has its main distribution in N.S.W. and southern Queensland but a slightly modified form occurs in the tropics. As does a related but clearly distinct species.

continued p. 64.

Orchids Common To North Queensland & South Eastern Australia. cont.

Sarcochilus hillii (F. Muell.) F. Muell. is a relative of S. ceciliae, but it grows on trees from southern N.S.W. to southern Queensland. Consequently it has evolved differences which have enabled it to grow on trees rather than rocks. In north Queensland (in rather dry scrubs) a related species occurs. It is S. tricalliatus (Rupp) Rupp. It has a wide distribution from about the Fitzroy River north to Princess Charlotte Bay, and to about 100 miles inland. S. hillii grows in damp forests in the southern part of its range, but grows in some dry scrubs. In its description Rupp emphasised its having 3 calli, the middle one of which is larger and two lobed, and it is on this point that he gave it its name. If he had looked more closely he would have seen this was typical of S. hillii also, and in fact all other species of Sarcochilus except S. spathulatus Rog. and S. weinthalii F.M. Bail. It is on this point that the latter two were split into the genus Parasarcochilus, this difference however, seems trifling, especially when the two plants are so obviously related to other species of Sarcochilus, and cross readily with them in cultivation.

Sarcochilus olivaceus Lindl. extends from southern N.S.W. to south Queensland and is fairly common in parts of its range. In north Queensland it is confined to the highlands and generally is uncommon. It flowers over winter in the tropics, but later in southern localities. North Queensland plants are generally much smaller than southern ones.

A related species S. serrulatus D.L. Jones occurs in the north Queensland highlands. It differs in having serrulated leaf margins and the structure and colour of the flowers. It is rather surprising in this species and that of S. ceciliae, S. roseus and D. aemulum that these orchids have diverged into two species in the first two cases, and into two very distinct forms in the latter case , in a part of their range where they are not very plentiful, or as well developed, as they are further south.

S.C. Clemesha

Malaxis marsupichila W.T. Upton - FURTHER CORRESPONDENCE.

M.W. Brown

The Editor.
Dear Sir.

I read with interest Walter Upton's article regarding Malaxis marsupichila and the subsequent articles in the June 1976 Orchadian.

There are three Malaxis in addition to M. leptochila and M. xanthochila in the peninsula. The smallest plant is found south-west of Cooktown, in swampy areas in granite country. It is about 10 cm. tall with quite large flowers about one centimetre across, and about 8 - 10 flowers to each inflorescence. I have seen it growing with Phaius tancarvilliae and Spathoglottis paulinae in shaded gullies.

The other two occur in the McIlwraith Range. The plant described by Walter Upton occurs in gullies on the edges of the monsoon rainforest. It occurs as he states, in colonies. Conditions become quite harsh in September - December when most trees in these areas shed their leaves. The plants are then buried in dried leaves and are difficult to locate.

The other plant of similar size occurs in the wet rainforest areas, scattered about, not in colonies. It flowers earlier in January - February. It is a neater plant, without the untidy undulate leaves and sheathing of Malaxis marsupichila.

Other members of this numerous genus must occur in the Cape York Peninsula.

Yours faithfully, Mal W. Brown

SOME NAME CHANGES AFFECTING AUSTRALIAN ORCHIDS.

Peter Lavarack

In a recently published book, four changes in nomenclature were made which affect Australian orchids. The book is "Orchids of Southern Ryukyu Islands" by Dr. L.A. Garay and Dr. H.R. Sweet, published by the Botanical Museum of Harvard University, Cambridge, Massachusetts, in 1974. The changes, all involving the synonymy of Australian species with widespread overseas species, are as follows.

Goodyera rubicunda (Bl.) Lindl. becomes Goodyera grandis (Bl.) Bl. It is perhaps worth noting that this taxon also includes G. papuana Ridl. from Papua - New Guinea.

Geodorum pictum Lindl. and Geodorum dilatatum R.Br. both are synonymised with Geodorum densiflorum (Lam.) Schltr.

Taeniophyllum wilkianum T.E. Hunt becomes T. glandulosum Bl.

continued p. 65.

Some Name Changes Affecting Australian Orchids. cont.

These changes are all the result of careful study of specimens from a number of localities and, while some may find it annoying when well known species such as Geodorum pictum change their names, in these cases it results in a better understanding of the orchid flora of the South East Asian region. This elimination of superflous names enables us to gain a better insight into orchid distributions.

The Southern Ryukyu Islands are a chain of rather low islands stretching between Formosa and Japan.

In many ways Australia and the Southern Ryukyu Islands represent respectively the southern and the northern extremities of the orchid flora of the South East Asian region, and it is interesting to note that 16 species are common to both areas. These species are listed below.

Apostasia wallichii
Calanthe triplicata
Corymborkis veratrifolia
Didymoplexus pallens
Epipogium roseum
Eulophia zollingeri
Geodorum densiflorum
Goodyera grandis
Goodyera viridiflora
Hetaeria oblongifolia
Malaxis latifolia
Microtis unifolia
Nervilia aragoana
Phaius tancarvilliae
Spiranthes sinensis
Taeniophyllum glandulosum

One other point warrants mention. In this book Microtis parviflora R.Br. is given as a synonym of Microtis unifolia (Forst.) Reichb.f. This was first suggested by Reichenach in 1871 and apparently followed by Ames and other overseas botanists since. Australian botanists from Rogers to George and Dockrill, have maintained them as distinct species.

Peter Lavarack

R.H.S. AWARD FOR AUSTRALIAN NATIVE HYBRID.

Joe Betts

Figure 88, on p.147 of the English 'Orchid Review' for May 1976, is a photograph of a plant of Dendrobium X delicatum CCC/RHS. This plant was a "mass of the typically white, pink flushed blooms from about 60 flower canes." The award was made at the Royal Horticultural Society's meeting of 9 March '76. There is no indication whether this plant is a natural or man-made hybrid.

NATIVE ORCHID RECORDINGS FROM WESTERN AUSTRALIA.

R.R. Oliver

As you will be aware, W.A., though reasonably richly endowed with terrestrial orchids, is very poorly off with sub-tropical and tropical orchids. Officially there are three epiphytes recorded in the north-west of W.A., but of these, actually only two are reasonably positive to date, Cymbidium canaliculatum and Dendrobium dicuphum. The latter was held rather in doubt until last year when an Agricultural Dept. expedition by helicopter, into the Prince Regent River area, yielded a positive specimen of D. dicuphum. I am not sure whether the Agricultural Department has a specimen in its own herbarium of this welcome find, in an attempt to culture it, but I know that a piece was given to an individual.

Disappiontingly, apart from a formal listing in an official report on the whole excursion, the location, or re-discovery of Dendrobium discolor was not made widely known to interested people in the field.

Mr Harry Butler, an acquaintance of wide skills and interests in field study and collection, has recently returned from a private excursion into this region. He has collected six orchids, three of which are terrestrial, and three epiphytes, all growing within a limited micro-climate in the Prince Regent River area.

As you may guess, I was rather excited to hear this, considering that to date (at least in recent times), we only considered that Cymbidium canaliculatum and Dendrobium dicuphum were the available N.W. orchids. It is quite possible that the four species, as yet to be identified, could be new species, or at least, races.

He has given me two terrestrials, and one epiphyte. One terrestrial orchid with very healthy tubers will probably survive and propagate. The other, which appears semi-terrestrial, is a very small fragment, and I may not be able to grow it. The epiphyte should survive. It is a small piece of the whole orchid (all taken south). The complete orchid, Dendrobium ? - was quite massive, with probably up to 200 canes. It could be D. dicuphum; its roots were firmly embedded in the bark of a paperbark type of tree, but apart from Cymbidium canaliculatum.

continued p. 66.

NOTICE OF MOTION TO AMEND THE A.N.O.S. CONSTITUTION.

Members who attended the last A.G.M. will be aware of a notice of motion presented to that meeting for resolution at this month's A.G.M. The motion reads: " Item 15 (j) of the Constitution be amended to read ' A quorum of the Council shall be not less than 5 members.'"

Native Orchid Recordings From Western Australia. cont.

I would strongly suppose that the paper-bark type of tree would be the preferable growing type for most other epiphytes.
It is a softcane *Dendrobium*, and is rather similar to illustrations of *Dendrobium discolor*, *but*, has no red marginal markings on the leaves. It is closer in appearance (no flowers available) to *D. bigibbum*! The remnants of petals on quite advanced seed pods indicate it flowered approximately early to mid-June. I have no doubt that the pods will survive to bear healthy seed. There are six seed pods available on the single stem. I will wait until signs indicate the continuation of seed development before sending them over for study and flasking.
I have the three species in a glass cold-house, and am confident of the survival of two of them. If this is indeed so, I would like to forward a piece - canes and flowers (I may be too optimistic) to the A.N.O.S. This will be probably next year, if and when flowering occurs. With the terrestrial, ditto.
I will do my best to obtain the other two species, but this may be difficult.
There is remarkably little interest over here in these new finds (and earlier ones which Mr Butler has made). As any expedition into our outback yields numerous finds new to science, in every area of botany and zoology, the various people officially concerned are not apparently able, or willing to enthuse or work on the lesser field of *Orchidaceae*. I feel sure that the A.N.O.S., with its considerable fund of experts and active students, will take a strong interest.
Of course I am hoping that these orchids are new species, and if so, will ask you to give them the recognition and status they deserve, by naming them.
I am of the very strong opinion, that if one man, whose interest lies in *all* fields of natural history, can find five species within a limited area, there must be many, many more to be discovered.
The terrestrial orchids were found near Stewart River, in the vicinity of Kim Bolton Station, near the coast. The *Dendrobium* was collected on the Carson Escarpment near Theda.

R.R. Oliver, 45 Kennedy Street, Alfred Cove, W.A. 6154.

Editor

Readers will, no doubt, be as excited as our President and Editor were, when they first read Mr Oliver's letter. I am continually reminded of the vast areas of our wonderful country which have yet to be studied thoroughly by our professional and amateur botanists. Despite the continual rape of our heritage by the timber industry, at both commercial and State levels and the sand miners, to name but two, areas still remain where new, or unidentified, orchids have survived. One wonders how many more might have been found had our Governments given our botanists the time and money to study virgin land before it was razed for so-called development!
The count varies, depending upon which botanist you talk to, however there are approximately seven new orchids from far north Queensland, which have yet to be described– most from areas in the process of being cleared for Japanese cattle interests. Six unidentified species from N.W. Western Australia, and the relationship between our native orchids and those of New Guinea as yet, untouched. Obviously there is still a wide, wonderful field, open to our botanists and students!

Editor

Dendrobium capituliflorum Rolfe In Australia.

I have just been informed by Phil Spence, who has just returned from yet another expedition to New Guinea, that workers there have definitely established that *Dendrobium capituliflorum* is endemic to Australia, and therefore *D. ophioglossum* becomes a synonym.
Further information will be forthcoming, but a quick check of Schlechter's works and Dockrill's "Australian Indigenous Orchids" revealed the following:-
Dendrobium capituliflorum Rolfe Kew Bull. (1901) p.46.
  D. confusum J.J. Sm. Bull. Dep. Agr. Ind. Neerl. XLV (1911). p.5.
  D. constrictum J.J. Sm. p.pt. In Nov. Guinea 8. VIII (1908) p.79.t XXVII. 87. fig. a.
  D. ophioglossum Reichb.f. J. Linn. Soc. Bot. 15(1876) 113.

APPETIZERS FROM THE NEXT ISSUE - SOME OF MANY HIGHLIGHTS!

Reviews of 2 recent books - Some Orchids of the Coffs Harbour District - A New Guinea *Bulbophyllum* - Miscellaneous Notes on Australian *Orchidaceae* - FitzGerald's Plates: continuing the reproduction of FitzGerald's wonderful drawings. Taken from black and white lithographs. This series will continue whilst plates are still to be found. Should you know of the existence of further B&W plates please advise the Editor.

FITZGERALD'S UNPUBLISHED PLATES.

The following article was originally received by the Society in time for publication in the July issue of The Orchadian; however the article was inadvertantly lost and by the time the author had kindly rewritten it, the July issue had gone to press with Peter Lavarack's letter on the same subject. For this reason, and because both authors have attacked the problem from slightly different angles, in some instances utilising the same material, I feel that I must publish Mr. Harry Douglass's material in full. Editor

Harry Douglass

In The Orchadian Vol. 5. No. 2. p.12, "Footnote on the Unpublished Drawings in the Mitchell Library" Item 89 in Rogers's Enumeration, you wished readers to try their skill on the followin data and write to The Orchadian.

I cross checked "The Orchadian" with Dockrill's Australian Indigenous Orchids eliminating the Australian dendrobiums until I came to *D. johnsoniae* F. Muell. This seemed a possibility so I then checked the Australian Orchid Review, March 1942, pp. 4 - 7 "The Genus *Dendrobium* in Australia", by C.T. White. This article lists them in alphabetical order as follows:-

" *D. johnsoniae*: This large flowered New Guinea species is recorded by Kranzlin as growing in the Cape York Peninsula."

In the Proc. Linn. Soc. Vol.LXXII, pts. 5-6, issued 15th. Jan. 1948, "A Review of the Genus Dendrobium (Orchidaceae) in Australia", Rev. H.M.R. Rupp and Trevor E. Hunt stated "*D. johnsoniae* F. Muell. in Wing's Southern Science Record (Melbourne)(1882), 95 & in Gardener's Chronicle (London) 1891,1, 552." "This magnificent orchid was recorded for Cape York by Kranzlin (Pflanzenreich 260) but he does not say on whose authority, and no other record is known. Bailey did not consider it an Australian species Mueller originally described it from a specimen sent by the well known New Guinea missionary the Rev. James Chalmers at whose request he named it in honour of a Miss Johnson of Surry Hills, N.S.W. Fitz. ined No. 89, with no name attached, undoubtedly represents *D. johnsoniae*. There is a faint inscription on this plate "Dinner Island, 28 August, 1888". Now there is a diminutive islet near Mackay, Queensland bearing that name but as the result of inquiries we are convinced that no such orchid as *D. johnsoniae* could ever have grown there. But "Dinner Island" years ago was the name commonly used for the island of Samarai, at the S.E. extremity of Papua. It was certainly known by that name to Chalmers, who had a mission station there. We think it most likely that this was the locality for Fitzgerald's plant. In deleting *D. johnsoniae* from the list of Australian species, of course we exclude with it the synonyms *D. niveum* Rolfe in Gardener's Chronicle London (1891) 1, 104, and *D. macfarlanei* Rchb.f. ibid (1882) 11, 520. Reichenbach's name in any case is invalid, being preoccupied by Mueller for another species."

In Dockrill's "Australian Indigenous Orchids", pp.430-431 states "The only Australian record of this species appears to be that specimen amongst Mueller's collection in the Melbourne National Herbarium labelled in Mueller's handwriting "Persich, Endeavour River 1884"

Harry Douglass, 123 Gladstone Av., Mt. St. Thomas, N.S.W. 2500.

NEW AUSTRALIAN NATIVE ORCHID HYBRIDS.

In the November 1975 registrations listed by the Royal Horticultural Society as International Registration Authority for Orchid Hybrids, the following items appear:

Name	Parentage	Registered By
D. Rosemary Jupp	*striolatum* X *teretifolium*	V.F. & N.C. Jupp
D. Sun Sprite	*gracillimum* X X*delicatum*	V.F. & N.C. Jupp

Noel Jupp has supplied the following information about these crosses:-

D. Rosemary Jupp (*D. striolatum* X *D. teretifolium*) 'At first thought this would appear an unlikely cross and it was a long while after thinking of making the cross that I decided to go ahead with it. Ever since the cross of *D. linguiforme* var. *nugentii* X *D. teretifolium* var. *fairfaxii* had turned out so well I had planned several more crosses within this terete leaved and Rhizomatous group of dendrobiums. In some areas of the Wattagan Mountains *D. striolatum* occurs in a form with a large recurving labellum with a ruffled edge, sepals greenish-brown with brownish-red striations through the flower. I decided that this form, crossed with *D. teretifolium* var. *fairfaxii* would be hard to beat and the cross was made; and also a parallel cross using the type form *D. teretifolium*. Of several flowers pollinated in both crossings, only two pods developed and both these from the type form mating. Seed production was good and germination too. As could be expected two distinct plant forms showed up - one favouring the *D. teretifolium* and the other favouring the *D. striolatum*

continued p. 68.

New Australian Native Orchid Hybrids. cont.

parent. Those favouring the D. teretifolium habit have, to my mind, produced the better flowers, up to five or occasionally six on a raceme of wide spreading flowers. Basically the are white to very very light greenish-brown; heavily striated deep brown; labellum recurving outside edges heavily ruffled; colour usually white. Those favouring the D. striolatum side were much smaller flowers, mostly light green in colour with brown striations; labellum as above. It has proved a successful and colourful hybrid.

D. Sun Sprite (D. Xdelicatum X D. Xgracillimum) The D. Xdelicatum used was in fact the so-called "Kestevenii" form*, a light yellow form that was brought to me by a friend. He brought a single spray over to show me and said that it opened a nice clear yellow, but slowly faded as it matured. This was the opposite to Bill Murdoch's well known yellow D. Xdelicatum which I believe deepens in colour as it matures. Anyway a nice yellow D. Xgracillimum was also in flower and I saw the chance for some nice yellow hybrids and so several flowers were pollinated; but only one pod developed. Seed production was good, germination was good, but for som reason we encountered heavy losses in transplanting to community pots. Growth was slow when young, but plants developed into nice rounded compact plants. My hoped-for yellows did not really eventuate; instead most have flowered a yellowish-peach colour - a vague description but the closest I can get to it. The surprise came with the flower shape and size. D. gracilicaule was stamped all over it so far as the basic shape was concerned but flower sprays are much longer. Altogether it was a real sun sprite!

Noel Jupp, Riverdene Nurseries, Allynbrook Rd., East Gresford, N.S.W., 2491.

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* Readers wishing to know more of the history and incorrect use of the name "Kestevenii" as a specific epithet should read past copies of The Orchadian, viz.:- Vol. 1, p. 137, 'Dendrobium kestevenii' by Walter Upton, and a comprehensive paper by Eric Gordon, Vol. 1 pp.146-149 entitled 'Is It OR Is It Not?'.

MEMBERSHIP FEES 1976 - 1977.

J.J. Betts

The response to our plea for early renewal of membership (and the payment of dues in arrears) has been excellent. The rate of enrolment of new members is also increasing markedly. This is just what we need to enable us to get on with the big plans we have for the coming year. If you have not sent in your dues, please get with the trend now! Why not introduce a friend to Australian Native Orchids and to A.N.O.S. while you are about it? Among our many new members is one from as far afield as Belgium! Maybe your next-door neighbour should be growin native orchids?

IRA BUTLER MEMORIAL TROPHY FUND COMMITTEE.

The Secretary of A.N.O.S. has received some correspondence indicating a misunderstanding of our role in relation to the Ira Butler National Trophy for the best native orchid hybrid of the year and the Achievement Award.

Readers might please note that A.N.O.S. is not directly responsible for administration of the fund and the establishment of the awards. We are represented on the Ira Butler Committee by 3 members: M. Corrigan, as Secretary, E.G. Gordon, as Chairman & Treasurer, and Phil Spence. Other members of the 7 man committee are Messrs. Athol Bell, A.B. Porter & Walter T. Upton representing the O.S. N.S.W. John Stuart is the independant, representing orchid societies and as one of the late Ira's closest friends has been invaluable in constructing the Award programme. John is Vice Chairman of the Committee.

To be eligible for the Native Hybrid Trophy the plant must be submitted to the O.S. N.S.W. for Award Judging, using the A.N.O.S. Standards which have been adopted by the O.S. N.S.W. Irrespective of the Award judging result, the points awarded and plant photograph are retained by the Judging Panel for determination of the Ira Butler Trophy.

The Achievement Trophy will be the most prestigious trophy to be created in the orchid field in Australia. Individuals may apply, or be nominated for this Trophy. They must have displayed outstanding talent and levels of achievement in developing Australian Native Orchid Hybrids. Nominations should be addressed directly to the Committee of the Ira Butler Memorial Trophy at the A.N.O.S. post box. This P.O. Box has been made available to the Committee to reduce overheads and no doubt this may have lead to some confusion regarding the responsibilities of A.N.O.S. and the Committee.

The Trophies have been created by a special Sub-Committee and designed by Walter Upton. They have been created from new space age techniques and will be displayed at Spring Shows.

The Editor

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Dedicated to the Study and Conservation of Australasian Indigenous Orchids

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Remember A.N.O.S. Badges are available @ Aust. $2.00 each, overseas Aust.$ 2.50. For details on our Flasking Service, read p.20 Vol. 5 - send cash with seed!

The Orchadian - 14th year of publication, 54 issues, 698 pages of interest

A NEW GUINEA BULBOPHYLLUM.

N.H.S. Howcroft

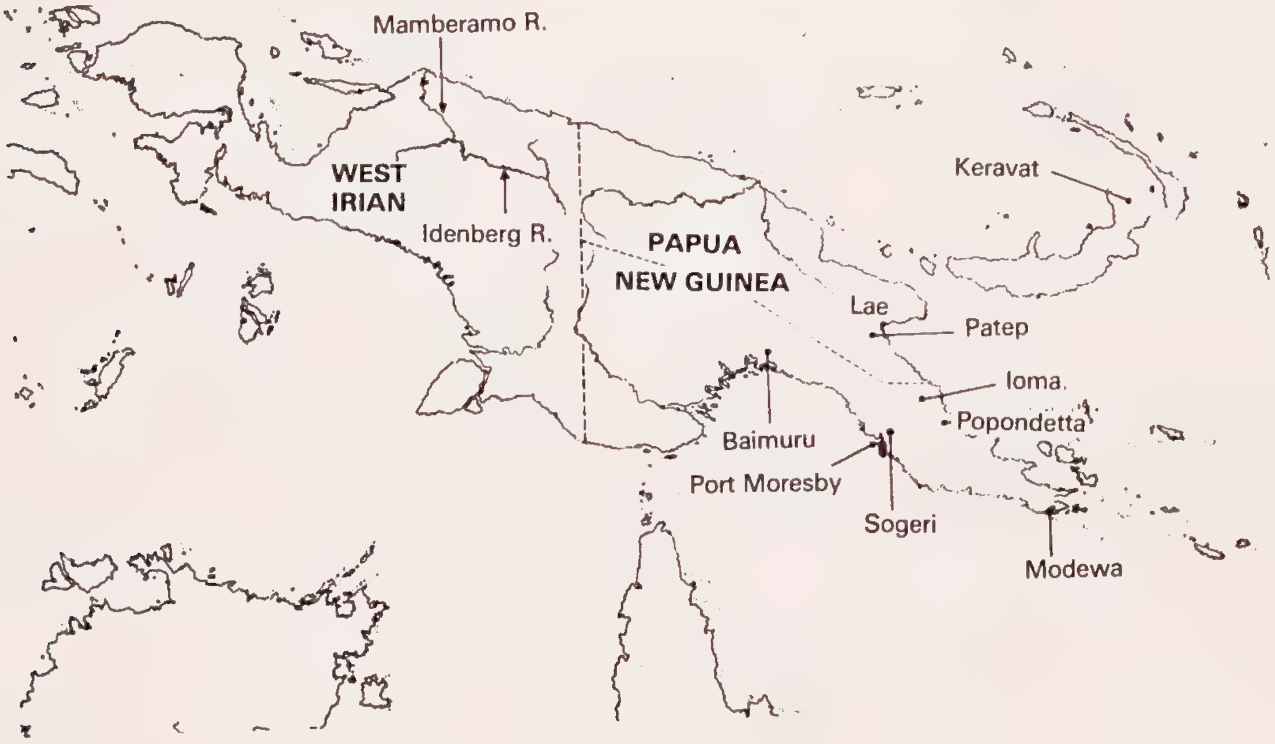
Section: Cirrhopetalum Lindl.
Species: Bulbophyllum graveolens (Bail.) J.J. Sm., Bull. Buitenz 2.5.8:24, 1912.
Synon. Cirrhopetalum robustum Rolf. Orch. Rev. 1:175, 1893.
Cirrhopetalum graveolens Bail. Bull. Dept. Agr. Qld. 13:33, 1896.

Description of Illustrated Specimen:

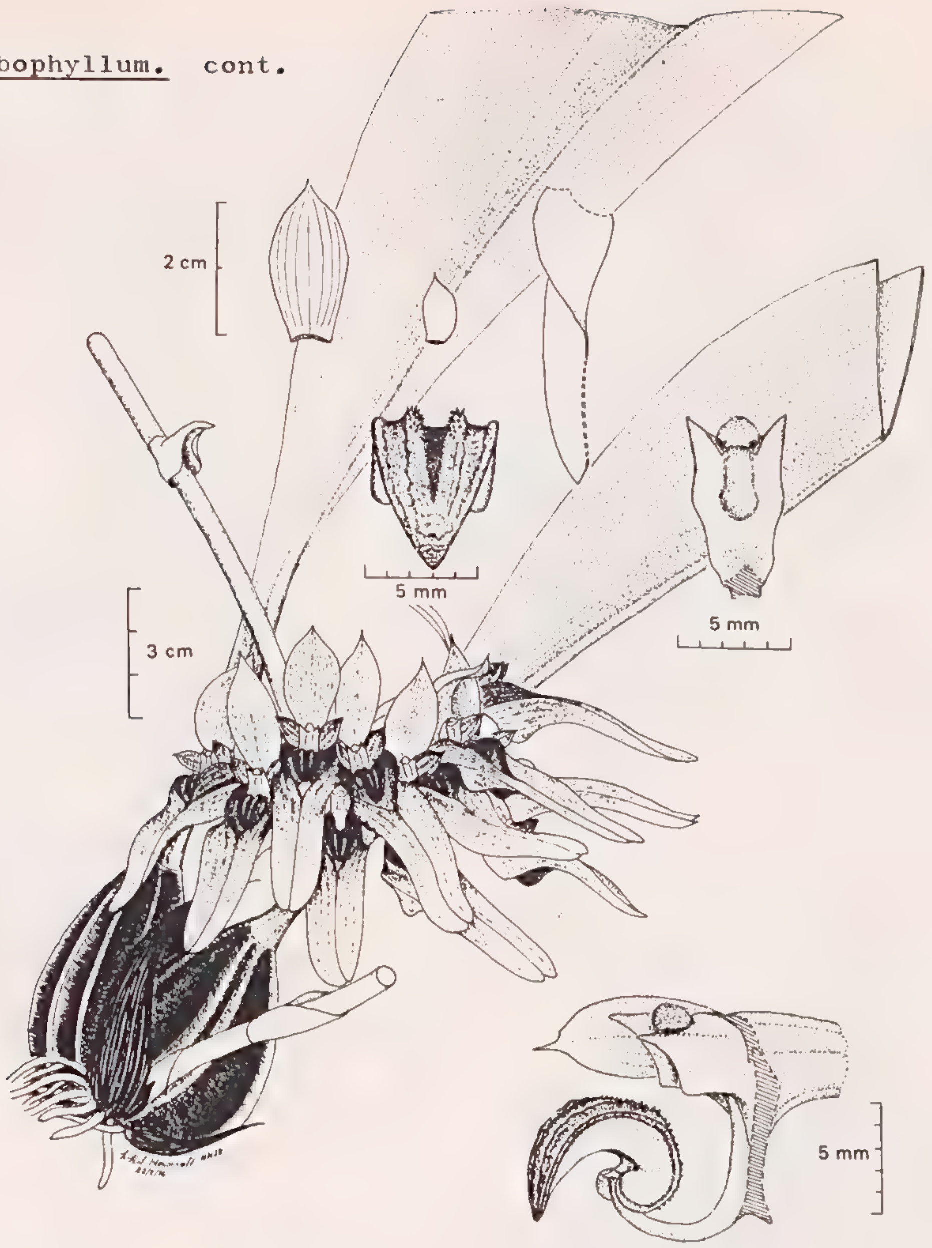
Plant epiphytic, robust, erect to semi-erect, up to 44 cm. high. Creeping rhizomes, c. 15 mm long and 10 mm diameter. Roots thin, smooth. Pseudobulbs dark to light green, ± ovoid, with six distinct ribs, 9 cm high, diameter 4 cm at widest section, unifoliate. Leaf erect, elliptic, apex obtuse, distinct midrib, petiole short, 35 cm long and 10 - 11 cm wide. Inflorescence light green, C. 24 cm long, 6 mm diameter, with three bracts, arising from base of pseudobulb, flowers 7 - 11, arranged in a horizontal circle or semi-circle, on pedicels 30 - 35 mm long, each with a large bract at base. Flower 8 cm long from apex of dorsal sepal to tips of lateral sepals. Dorsal sepal 34 mm long, 14 mm broad, ± ovate, apiculate, yellow-brown. Petals 11 - 12 mm long, 5 mm wide, obliquely oval, apiculate, smooth, light brown, dark brown along mid vein. Lateral sepals 52 mm long, 8 mm wide, dilated to 14 mm at base, ligulate, united from mid-length to end, smooth yellow with brown striations and blotches, inner surface of base flecked and streaked with red and maroon. Labellum fleshy, 7 - 8 mm long, 5 - 6 mm wide, oblong, obtuse, greatly curved, with two parallel ridges in central position, with pustules or short thick hairs, rim of labellum also ridged, articulate on apex of column foot, red to maroon on upper face, glossy when fresh, ventral keel white. Column short, C. 7 mm long, smooth, light yellow with two short thick stelids, ± porrect, 2 mm long. Column foot C. 10 mm long, curved forward. Anther cap yellow, rugose to pustulose. Pollinia 4 in two appressed pairs, large, yellow and viscous.

Distribution:

A number of locality recordings by various authors indicate that this orchid has a wide distribution throughout coastal New Guinea and some of the adjacent islands.



A New Guinea Bulbophyllum. cont.



Bulbophyllum graveolens (Bail) J.J.Sm.

1496

Its altitudinal range appears to be from sea level to about 1,000 metres above sea level. The collection localities are indicated on the map to illustrate the recorded distribution to date: 1. Near Ikiki Creek, off Pie River near Bairumu. 2. Above Rouna Falls near Sogeri, Port Moresby (A. Millar et al. 3. Modewa (Brass.). 4. Ioma via Popondetta (coll. unknown). 5. Patep, between Lae and Mumeng (A. Millar). 6. Kerevat, New Britain (N. Howcroft and B. Schneider). 7. Idenberg River (Bruyn). 8. Mamberamo River (coll. unknown).

Flowering:

The Sogeri specimen illustrated here was collected in January, and while in cultivation at Bulolo it produced blooms in January and February. These lasted for several weeks before dying. The New Britain form which has canary yellow flowers, photo No. 1 produces blooms at Bulolo in September. It has been consistently later than the Sogeri plant, in all its flowerings.

The flowers produce a foul odour. This is very weak in the early hours of the morning and increases in strength by about 10.00 a.m. It attracts large flies which remain with the flowers for some time. These flies are pollinators of this orchid and three species were observed attracted to the flowers.

The flies remove the pollinia in a flight of panic when the mobile labellum over balances with the weight of the fly, and tips the startled insect towards the column.

During the day when the smell of the flower is strongest, the insects become very agitated, and during flight stumble over the labellum, which appears to catapult them, upside down,

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A New Guinea Bulbophyllum. cont.

with force, on to the stigma. Here the flies often become stuck and perish.
Photo's No. 2 and 4 show a fly on a flower of Bulbophyllum graveolens up to the point where it advances on to the labellum and becomes trapped and perishes.

Other Notes:

In his text of "Orchidaceen von Deutsch-Neu-Guinea", page 889, Schlechter describes a new species called Cirrhopetalum pachybulbum Schltr. sp. nov. (Bulb. pachybulbum (Schltr.) Seiden.) and in his notes, points out that this orchid was close to Bulbophyllum robustum . The differences being in flower size, lid and stelids.
On examining Schlechter's illustration No. 1195 on Tafel CCCXI, of his "Figuren-Atlas", the main difference in the labellum seems to be in the tip, which in Schlechter's specimen, is much broader than that viewed on Bulbophyllum graveolens. It is interesting to note here that the labellum, illustrated in Seidenfaden's "Notes on Cirrhopetalum" Fig. 199e, page 220 for Bulbophyllum graveolens is not like those viewed by the author. This illustration does not show the distinctive ridges, which Schlechter's Bulbophyllum pachybulbum apparently has, but shows rather a deep groove. This may be due to the condition of the material used for illustration, or it could suggest that Bulbophyllum graveolens is a variable species.
The illustration of the column with its stelids on Bulbophyllum pachybulbum does appear to be similar, but not the same as those of Bulbophyllum graveolens. The column foot in Schlechter's illustration appears to be shorter than that of Bulbophyllum graveolens.

Literature:

The following list is limited to only those used by the author in reference.

Latif S.M., "Bunga Anggerik, Permata Belantara Indonesia" (1960) 192 - 193.
Orch. Soc. Papua New Guinea, "Orchids of Papua New Guinea" Vol. 1 (1972) 3 - 4.
Seidenfaden G., "Notes on Cirrhopetalum Lindl." Danish Bot. Ark. Bind. 29. NRI (1973) 219-221.
Schlechter R., "Orchidaceen von Deutsch-Neu-Guinea" (1914) 889.

Acknowledgements:

I thank Mr. Ted Henty of Botany Section of Office of Forestry, D.P.I. Lae, for his kind assistance and use of the section's library.

*The illustration of Bulbophyllum graveolens is one of a series lodged (for record purposes only) with the Papua New Guinea, Lae Herbarium, and these cannot be published in any article without the permission of the author and artist.

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BOOK REVIEW - "Australian Complete Book of Flowers" by Stirling Macoboy & Alec Blombery

Though the title of this book is an exaggeration, it does describe and depict with a coloured plate, over 1660 species. The description of each is necessarily brief but interesting and tells of each plant's country of origin. The pictures are clear and in most cases easy to identify from.
At $19.50 the book is fair value for its price and typical of the publishers - Paul Hamlyn. Like most books of its type, it generalises with plants in large genera. A description of how to grow one species is given in a way that implies you grow the whole genus that way, e.g. in Coelogyne it is stated "Coelogynes may be grown in containers in the open even where temperatures drop as low as 38°F." Certainly the north Indian species can stand temperatures as low, or lower, than this but those from Borneo and other tropical lowland countries definitely would not.
The sections on ferns show a lower degree of accuracy than the other sections. The commonly cultivated N.S.W. and Queensland native tree fern Cyathea cooperi is labelled "New Zealand Tree Fern", and its habitat is incorrectly given as New Zealand. The plate of it contains two tree ferns. One clearly is C. cooperi, the other, equally clearly is Dicksonia antarctica. The latter species is treated separately and labelled "Tasmanian Tree Fern". It is sometimes called by this name in the U.S.A. However this name is not accurate, as though the plant is abundant in Tasmania, it is equally so in many parts of Victoria, N.S.W. and southern Queensland. The distribution of the plant is given as "Tasmania".
Mistakes of this type are few but they could have been avoided with a quick check.
The emphasis on Australian species is evident and very wisely many difficult to cultivate species are so stated. A wise course as people are not told they can grow a certain plant under conditions where it would not succeed.

continued p. 73

A New Guinea Bulbophyllum. cont.

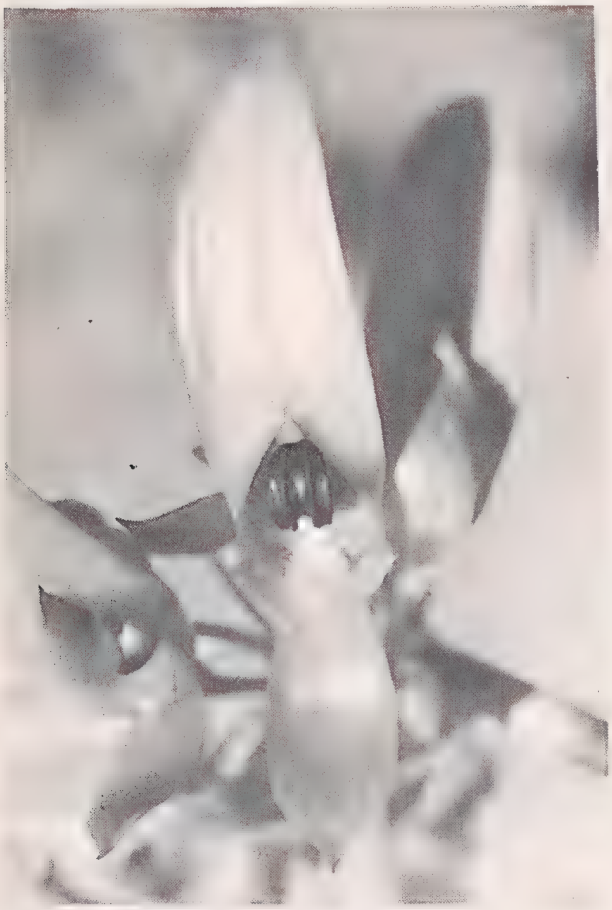

Photo No. 1 A flower of *B. graveolens* from Keravat, New Britain.

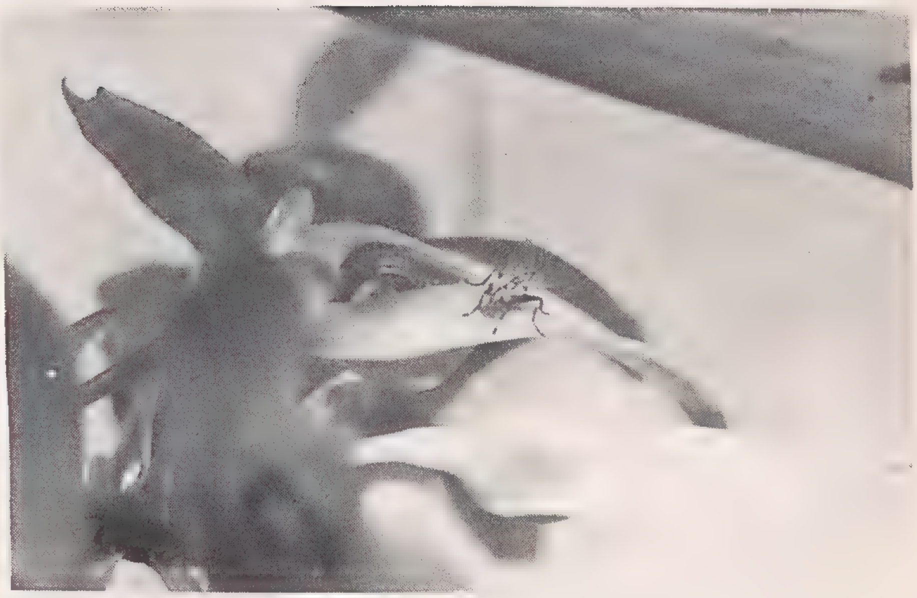

Photo No. 2 A fly lands on lateral sepal of *B. graveolens* seeking source of odour emitted by the flower.

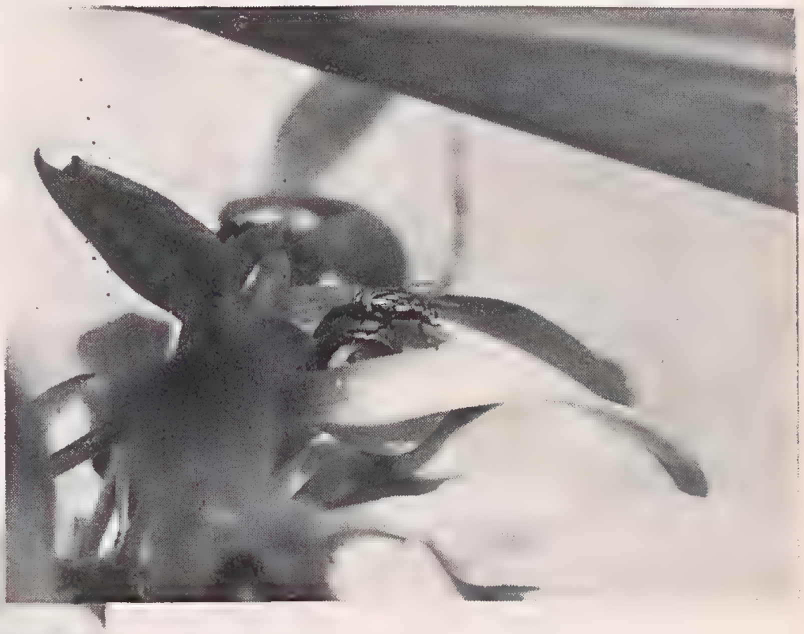

Photo No. 3 The fly about to move onto the labellum which will then throw the fly forward.

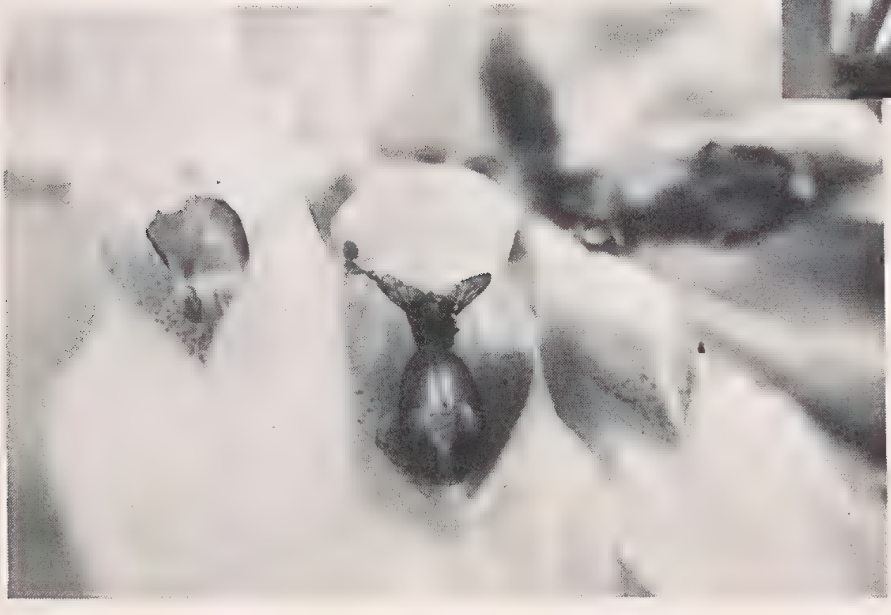

Photo No. 4 The fly has been thrown into the stigmatic section and held fast by the sticky fluid, has perished. An ant on the left wing tries to remove the body.

Book Review - "Australian Complete Book of Flowers". cont.

This book should prove most successful because of its high degree of accuracy and the appropriateness of its notes especially when one considers its size and fair price. Published by Paul Hamlyn, 285 mm x 210 mm 511 pages, 1,660 colour plates, suggested retail price $19.50.

S.C. Clemesha

BOOK REVIEW - "AUSTRALIAN WILDFLOWERS TO CULTIVATE" by A.M. Blombery

This book joins a large array of pictorial volumes on our species of native plants. The layout of photographs and genera has been used before, as have some of the photographs themselves.

The quality of the photographs is generally good, but only some are exceptional. The orchid photographs are not as good as we would hope but these are difficult subjects to all but a specialised photographer. The flowers often are not well presented and it can be difficult to obtain detail in a photograph of a white flower.

Nomenclature is quite accurate but on checking with the Royal Botanic Gardens the following adjustments should be made:

Acacia botrycephala is now A. terminalis
Brachycome ibiridifolia should be B. iberidifolia
Dendrobium delicatum should be D. X delicatum
Disphyma australe is a species restricted to New Zealand, the Australian member being named in 1971 as D. blackii and then in 1976 renamed D. clavellatum.
Grevillea bauera should be G. baueri
Grevillea punicea should be G. speciosa

Taking the title literally, the book is quite good in that it has photographs of all species described with notes on flowering season and size of plant. In some cases horticultural notes are added.

The book would be quite valuable to anybody like myself who enjoys growing all native plants and would like a reference book that covers such a large range of genera with the outstanding species of each.

The volume is published by Hamlyn Books and retails at $3.95 which is very good value for the large number of colour photographs contained within. It is 18 cm x 25 cm , hard cover, 128 pages, 249 colour plates. National Library of Australia card number ISBN 0 600 07376 9.

Peter Vaughan

CORRESPONDENCE.

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South Perth,
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The Editor,
The Orchadian.

I wish to comment on the article by R. Oliver in The Orchadian Vol. 5 No. 5 concerning orchids from tropical Western Australia. Dendrobium dicuphum has been positively recorded for W.A. since June 1921 when it was collected on the Upper Calder River by the late Charles Gardner. The collection is held in the Western Australian Herbarium at the Department of Agriculture. A further collection made by P.G. Wilson on Osborne Island in June 1973 is also held at the Herbarium. Because the species was considered rare in W.A., a third collection made in 1974 from Mt. Trafalgar near the estuary of the Prince Regent River was singled out for special mention in a report on the expedition (Miles, Kenneally and George in A Biological Survey of the Prince Regent River Reserve, North West Kimberley, Western Australia in August 1974, page 29. Wildlife Research Bulletin No. 3, pub. 1975). The locality, while rather inaccessible, is accurately cited, and there are photographs of the habitat (semi-deciduous microphyll vine thicket). The report has been widely available for over a year. Both living and dried specimens are held at the W.A. Herbarium.

Further, Dendrobium dicuphum was found to be locally common in a similar habitat to the Mt. Trafalgar site by an expedition to the Drysdale River National Park in August 1975. Cymbidium canaliculatum was found at the same locality, and a nearby creek, previously unnamed, has been officially named Orchid Creek, especially to honour the Dendrobium. The details of these collections, along the Carson Escarpmont, will be published shortly in a report on the expedition.

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Correspondence. cont.

In my check list of the Orchidaceae of Western Australia (Nuytsia Vol. 1. No. 2, 1971) four species of orchids are recorded for the Kimberley. Dendrobium dicuphum and Cymbidium canaliculatum are the only epiphytes, while the two terrestrials are Eulophia venosa and Nervilia holochila. Specimens of the latter two are held at the W.A. Herbarium.
I have long considered that further orchids should occur in the Kimberley. Tantalising reports of sightings come in from time to time, but very rarely are specimens submitted, and no valid identification or record can be made without authentic specimens lodged in a herbarium.

Yours sincerely

A.S. George
BOTANIST

SOME ORCHIDS OF THE COFFS HARBOUR DISTRICT.

S.C. Clemesha

In an early Orchadian Mr. Len Archer gave an impressive list of orchids he had found on the north coast of N.S.W. In the short time I have been living here I have not seen many orchids but some of the few I have seen are worth commenting on.
My most interesting find was in an area about 20 miles north of Coffs Harbour. Here in very sandy soil near the coast, grew Acianthus amplexicaulis and Cheirostylis ovata. The Acianthus is unusually small and insignificant, even for an Acianthus. It usually opens 1 or 2 flowers at a time, and most flowering plants have leaves which are lobed to varying degrees. At this locality all flowering plants bore lobed leaves but at other ones this is not necessarily so. This orchid was found for the first time in N.S.W. by Mr W. Brinsley who gave a thorough account and drawing of it in The Orchadian.
Cheirostylis ovata is ajewel orchid relative which many orchidists would not have expected to have crept this far south. It has a succulent stem and no roots - just saucer-like plates along its length. The plants at this locality are smaller than those I have seen from north Queensland.
Pterostylis nutans var. hispidula is a small autumn flowering variety of P. nutans. The flowers show minor differences from those of P. nutans var. nutans. The flowers are no more hispid than those of P. nutans var. nutans but the plant was originally described at specific rank and later reduced to a variety. The plant has been found in central N.S.W. and also in some north coastal areas. It is not known how far north this plant extends and it possibly may be found in southern Queensland.
The plants I found near Woolgoolga are a good match for specimens found further south. This plant grows in rain forest or semi rain forest country and it has not been found outside N.S.W.
Liparis habenarina is a true terrestrial which in N.S.W. favours swampy native grassland areas. It once grew near Sawtell railway station and at another area a few miles south of Coffs Harbour. It still exists in similar country about 10 miles north of Coffs Harbour. This species has an underground pseudobulb which is replaced annually. It is difficult to cultivate in Sydney at least. Its flowers are not showy. For many years this plant was not recorded from southern Queensland though it was found in north Qld. and N.S.W. It has now been found in southern Queensland and is quite plentiful near Capalaba - a Brisbane suburb.

PRESIDENT'S REPORT TO THE 1976 ANNUAL GENERAL MEETING.

J.J. Betts

The past year has been an important one for A.N.O.S. It is perhaps significant that the Annual General Meeting for 1975 took place in November instead of September, that no minutes were submitted for that meeting, and that the audited financial statement for the preceding year was not submitted until February 10, 1976. Obviously A.N.O.S. was going through a temporary "bad patch" when the year began.
For this meeting, on 25th. September, 1976, you have before you both minutes and audited financial statement properly signed and dated. In presenting these, I want to give you my personal account of what has been a short, but eventful and, I believe, a productive and constructive year.
Attendance of Councillors at monthly meetings has been generally good. Sessions have been long and to those Councillors who endured them, sometimes into the small hours, I offer my

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President's Report to the 1976 Annual General Meeting. cont.

gratitude - and sympathy. Much was achieved, but there is much more to be achieved in the coming year.

We began the year with four comparatively new Councillors. We finish the year - at September 1976- with five; including two co-opted in July: Phil Collin and Garry Wells. During June it was unfortunately necessary for the Secretary, Norm Hilliger to resign from Council after he had contributed much in the way of good ideas and tangible improvements for the Society. I should like to mention particularly, here, Norm Hilliger's tireless efforts in organising and managing our first and second Spring Shows in conjunction with the Pittwater Spring Festival at Mona Vale. Both of these shows were highly successful in bringing an appreciation of native orchids to the public. Moreover they were successes not only financially, but also in attracting new members.

I must place on record the Society's indebtedness to Keith Edwards for stepping into the Secretary's role so willingly and so efficiently at such short notice. We are particularly pleased that he will continue as Hon. Secretary this coming year.

Eric Marygold will not be continuing as Treasurer. Council has accepted his resignation with considerable regret in the light of his long service on Council, not only as Treasurer, but also, for a period, as both Secretary and Treasurer - a load which is too much for one person. Eric's health has proved a further complication for him in recent months, and here again, we have had loyal support from other Councillors willing to assist. Phil Collin has been elected Hon. Treasurer to replace Eric. Phil himself is to undergo an operation on October 8 which will, for a few months, delay his taking over the Treasurer's full duties. In the meantime I have taken over the work from Eric Marygold until Phil Collin is well again.

Attendances at the eight monthly meetings were as follows:

N. Hilliger	5 (resigned June)	E. Gordon	6 (Illness - 2 meetings)
M. Corrigan	7	E. Marygold	4
J. Betts	8	R. Lowe	8
K. Edwards	8	L. Bradford	8
P. Vaughan	6 (University exams prevented 1 attendance)	Co-opted in July	
		G. Wells	2 out of 3 (Uni. exams for 1).
		P. Collin	2 out of 3 (Illness for 1).

Membership had declined from its peak of 503 for 1968-9 (attributed to the 6th. World Orchid Conference in that year). In the following year, 1969-70, it fell by 59 to 444, and in the next three years it had fallen as low as 316. The Treasurer reported a further fall for 1975-76, but I am afraid the records to 30th June, 1976 were not up to date. I shall content myself with presenting the figures as they are to-day and compare these with the first enthusiastic year when the Society was formed. In that year 1963, membership reached 334. At the present time it is in excess of 370 (after removing 44 unfinancial members) and appears to be increasing at the rate of about 10 per month since mid-May when I believe our new policies began to be felt. Increasing membership is vital to maintaining and improving the standard of The Orchadian, which I regard as the single most important element of our Society. With members so widely distributed over all States of Australia as well as overseas, we must give priority to The Orchadian as our means of communication. Four issues were produced in the past year, and these were enhanced by the four page centrefold supplement reproducing the now rare work of R.D. FitzGerald. This feature has brought us valuable publicity and hence new members. Such features, and our intention to increase the frequency of issues, can only be achieved with adequate funds. Very tangible support has been given us by a generous donation of $75 from the Warringah Group of A.N.O.S. It is to be hoped that other Groups who wish to ensure the further development of The Orchadian as an effective vehicle of communication will follow the Warringah Group's example.

New Groups. Plans are in hand for the development of new Groups - on the South Coast of N.S.W. and in South Australia (to name the two earliest likely inaugurations).

Translation of Schlechter's Work. During the year, a donation of $100 was received from Mr. G. Hermon Slade to assist in the translation of the Introduction to Rudolf Schlechter's "Die Orchidaceen von Deutsch-Neu-Guinea" - a work which is indispensable to those studying the wealth of native orchids to be found in the northern part of our sphere of interest. This is a difficult and costly project, but a beginning has been made.

Flasking Service. We have reported in The Orchadian the details of our Flasking Service for members. This too is fulfilling a need expressed by those interested in the propagation of species and hybrids. It is interesting to note that all seed pods so far submitted, have been from species orchids. In the coming year, we hope to have seed from new discoveries made in the north of Western Australia.

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President's Report to the 1976 Annual General Meeting. cont.

Scientific Aspects. On the scientific side, we have published botanical descriptions by Walter Upton of two new species from Queensland and we expect to do more of this in the coming year. Similarly new taxonomic combinations have been described by David L. Jones. These are some of the more important aspects of our journal and to ensure its botanical accuracy we have, during the year, obtained the agreement of Mr Don Blaxell of the National Herbarium of N.S.W. to act as our adviser and scientific referee.

Major contributions to The Orchadian during the past year have come from most States and from New Guinea. I would list them as: Neville Howcroft from New Guinea, Stephen Clemesha, Walter Upton and Noel Jupp (N.S.W.), R. Bates and L.T. Nesbitt (S.A.), R.R. Butler (W.A.) and P. Tonelly (Tas.).

I am confident that we shall have more from these writers in future. For some of them, it is clearly a matter of restored confidence in A.N.O.S. and it is the Editor's sincere intention to foster this trend. We shall try to develop more material on the cultivation of native orchids and their hybrids, and down-to-earth descriptions of habitats of the species. Unfortunately authors are difficult to obtain in this field, but every encouragement will be given to such writers. To illustrate the sort of material we are looking for, I would invite the attention of members to the article to be published in the December Orchadian on Native Orchid Notes and Culture by Ted Gregory.

Ira Butler Memorial Trophies. The Committee administering these trophies has received considerable assistance from A.N.O.S. representatives, and the first trophy may be awarded during the next 12 months.

In conclusion: I would like to say how grateful I am for the support given by Councillors and many other members. Every little helps. Constructive criticism can be as valuable as the more tangible support, and I would welcome much more of both in the coming year. It would not be in my character, however, to fail to comment that I have also had some disappointments. There have been a few cases where I have attempted to stimulate a revival of interest by writing personal letters to respected former contributors, and others having something of a reputation in our field of study - and have received absolutely nothing in reply. The good news, however, is that contributions to The Orchadian are now at a level which leaves no doubt as to its survival.

In embarking on one more year as President, I wish every member my best wishes for our future.

J.J. Betts
President
25-9-76

MOUNT REMARKABLE NATIONAL PARK.

R. Bates

Mt Remarkable National Park is famous in South Australia for its scenery and bushwalking. With such features as Alligator Gorge, Mambray Creek and Mt Remarkable itself, the tourists come in droves to get away from the city.

In summer very little rain falls and the park is closed to campers, but in the winter it is an area of high rainfall, surrounded by semi-arid country. Nearby Port Augusta averages less than 10" (250 mm) of rain per year, and Willowie to the east only 300 mm , yet the park itself averages over 600 mm annually. Consequently there are over 40 species of winter and spring flowering orchids found in the park, making it a magnificent hunting ground for orchid photographers and appreciators.

The Orchids: Because it is an isolated area of reliable rainfall the park contains species that are not found within 300 km.

The area represents the northern limit of at least 15 orchid species in South Australia.

The park has at least 2 endemics not found elsewhere. One of these, Prasophyllum validum with large green flowers on spikes over 1 m tall, has never been found outside the area. Sometimes it is not seen for years, but recently several colonies have been located. The strongly perfumed

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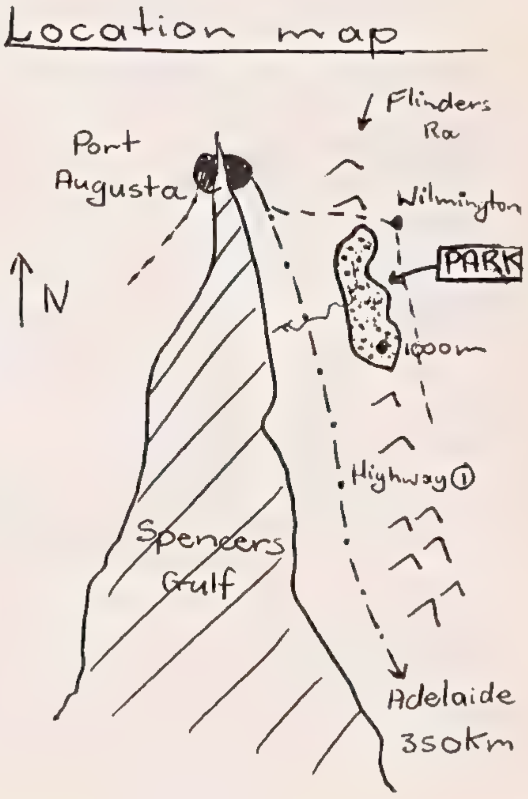


Mount Remarkable National Park. cont.

Caladenia gladiolata is now almost restricted to the Alligator Gorge area, but luckily in large colonies. The park also has a form of *Thelymitra pauciflora* with a 'tuftless' column. It has other distinguishing features also, and may prove to be a 'new' species.

Two eastern state species, the beautiful *Caladenia alba* and *C. carnea* var. *gigantea* are both found in the Mambray Creek area - they probably represent remnant colonies of species that were undoubtedly much more common in years gone by.

Orchids in the park which are typically South Australian include the beautiful blood-red form of *Caladenia leptochila*; the desert species *Caladenia toxochila* and *Caladenia filamentosa* var. *tentaculata*; the sweetly scented, deep purple *Prasophyllum fitzgeraldii*; the strongly perfumed, but small flowered *Prasophyllum pallidum* and *Prasophyllum occidentale*. The large, fragrant, white *Thelymitra nuda* with individual blooms up to 5 cm across delights the tourists in October.

Several species including *Pterostylis curta*, *Microtis parviflora* and *Thelymitra rubra* are normally associated with much cooler, damper climates, but grow here isolated from other populations by 200 km.

Caladenia huegelii was recorded for the first time in South Australia near Alligator Gorge (later found elsewhere) and some fascinating hybrids have evolved, i.e. *Caladenia huegelii* X *C. patersonii*, *C. huegelii* X *C. gladiolata*, *C. gladiolata* X *C. patersonii* and hybrids between these and *C. dilatata*.

Several species reach their maximum development for South Australia, as regards size, in the park - including *Orthoceras strictum*, *Caladenia latifolia* and *Pterostylis robusta*.

It would appear that Mt Remarkable National Park is perhaps the area best representing the South Australian orchids and fortunately most of them are safe for years to come.

Complete list of species - Mt Remarkable National Park:

Caladenia
- *C. deformis* (abundant)
- *C. latifolia* (common)
- *C. carnea* (common)
- *C. carnea* var. *gigantea* (uncommon)
- *C. alba* (rare)
- *C. dilatata* (common)
- *C. gladiolata* (isolated large colonies)
- *C. leptochila* (not common)
- *C. patersonii* (common)
- *C. huegelii* (not common)
- *C. huegelii* X *C. patersonii*
- *C. filamentosa* var. *tentaculata* (not common)
- *C. tesellata* (rare)
- *C. toxochila* (not common)

Pterostylis
- *P. boormanii* (common)
- *P. biseta* (abundant)
- *P. rufa* ssp. *aciculiformis* (abundant)
- *P. hamata* (rare)
- *P. cycnocephala* (not common)
- *P. mutica* (not common)
- *P. plumosa* (not common)
- *P. nana* (abundant)
- *P. longifolia* (common)
- *P. vittata* (common)
- *P. curta* (uncommon)
- *P. robusta* (abundant)

Prasophyllum
- *P. rufum* (rare)
- *P. validum* (very rare)
- *P. fitzgeraldii* (common after fires)
- *P. odoratum* (abundant)
- *P. elatum* (rare-seen after fires)
- *P. occidentale* (isolated colonies)
- *P. pallidum* (common after fires)

Diuris
- *D. palustris* (common)
- *D. pedunculata* (not common)

Acianthus
- *A. reniformis* (abundant)
- *A. exsertus* (abundant)

Microtis
- *M. unifolia* (abundant)
- *M. parviflora* (common)
- *M. oblonga* (rare)

Thelymitra
- *T. aristata* (common)
- *T. nuda* (abundant)
- *T. aristata* X *T. nuda*
- *T. rubra* (common)
- *T. pauciflora* (2 forms, both common)
- *T. chasmogama* (very rare)
- *T. luteocilium* (abundant)

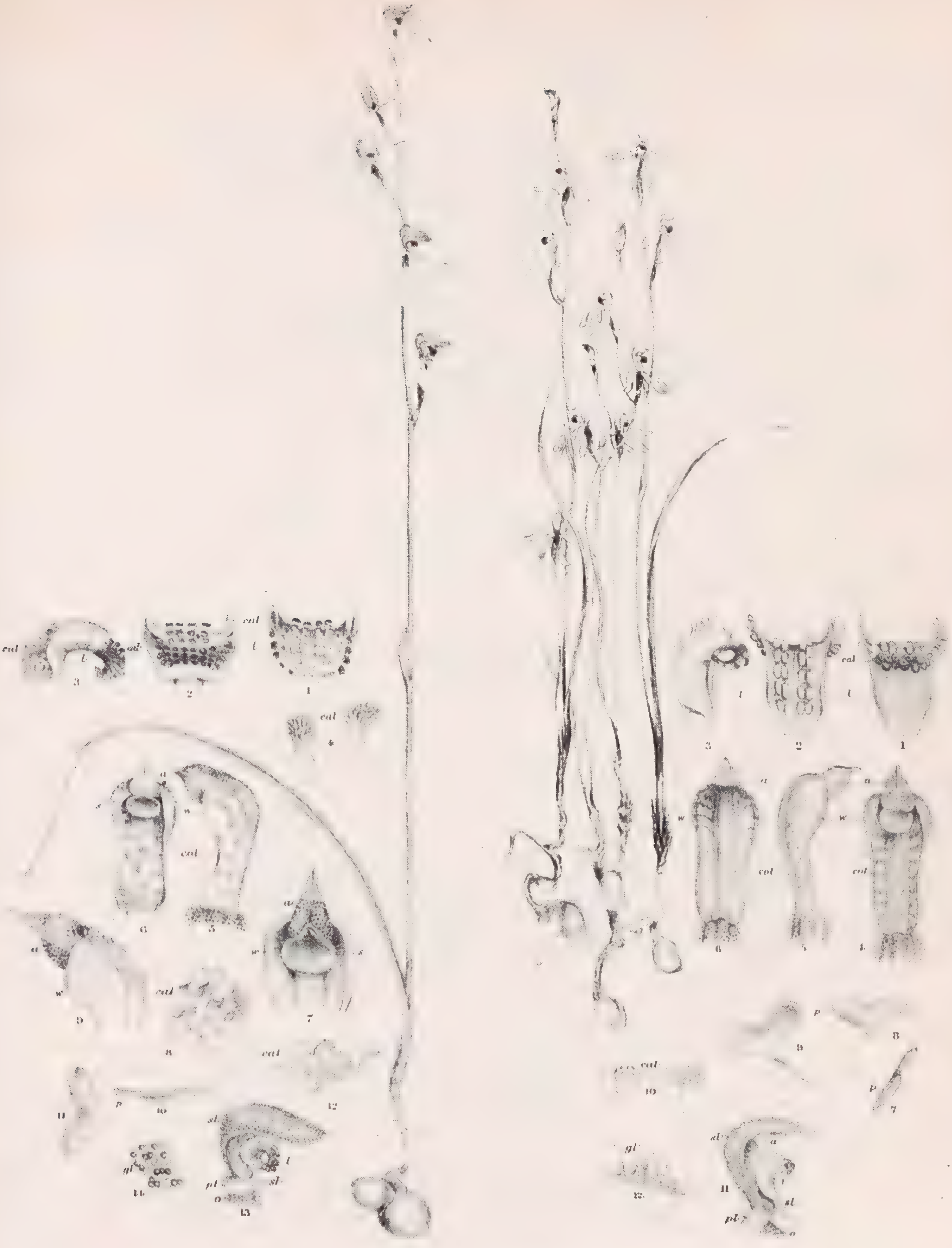
Orthoceras strictum (common)

From just south of the park: *Acianthus caudatus*, *Eriochilus cucullatus*, *Pterostylis pedunculata*.

R. Bates, 38 Portmarnock St, Fairview Park, S.A. 5126.

OVERDUE MEMBERSHIP FEES

This is your FINAL notice dear member, If your fees are 6 months overdue!
If your March issue of The Orchadian does not arrive YOU ARE UNFINANCIAL



From Nature and on Stone by R.D. Fitzgerald F.L.S.

CALADENIA

Cucullata. Testacea.

Sydney, N.S.W., Thomas Richards, Government Printer.

Caladenia cucullata *(Fitzgerald).* Caladenia testacea *(R. Brown).*

As among birds, many species are represented on opposite sides of Australia by closely allied forms, so amongst the Orchids are species approximated on the distant shores of this great island. Not only so, but while some genera and species would seem to be unable to cross the great dividing range, others, though they have passed the barrier, would appear to have been isolated from each other thereby, so as to have passed (possibly in the same way as the species of birds referred to) into other shapes, and such shapes often retain so much in common that the naturalist hesitates about claiming the points of distinction as of sufficient importance to demand a separation of species.

But to avoid the separation, and unite one form (generally selected from its frequency in some one locality) with others, as varieties of it, when there is nothing to show that they reproduce each other, is, in my opinion, a greater error than the occasional separation of forms under the name of species, that may hereafter be found to reproduce each other, and that therefore must be regarded only as varieties. The submergence of possibly constant forms, under the head of varieties, induces a brevity and laxity in their descriptions that embarrasses the student, and prevents that close investigation into their stability become so necessary at present, when science demands the determination of the great question of mutability—a question that can only be solved by the patient study of the buds (as it were) before they become branches.

The two forms figured on the opposite page do not, I believe, reproduce each other, and are, I think, sufficiently separated to require demarcation as species. The inland form I have named *cucullata*, from the dorsal sepal hooding the column to a far greater degree than is the case in *C. testacea.* The first specimens I obtained were from Dr. Ross from Molong, and I subsequently received exactly similar from Mr. G. H. Sheaffe from Boorowa. It flowers in October.

C. testacea is found in the neighbourhood of Sydney, growing in stony places under the shade of the "tea-tree" (*Kunzea*), and is one of the last of the *Caladenias* to blossom, being in flower in the latter end of September.

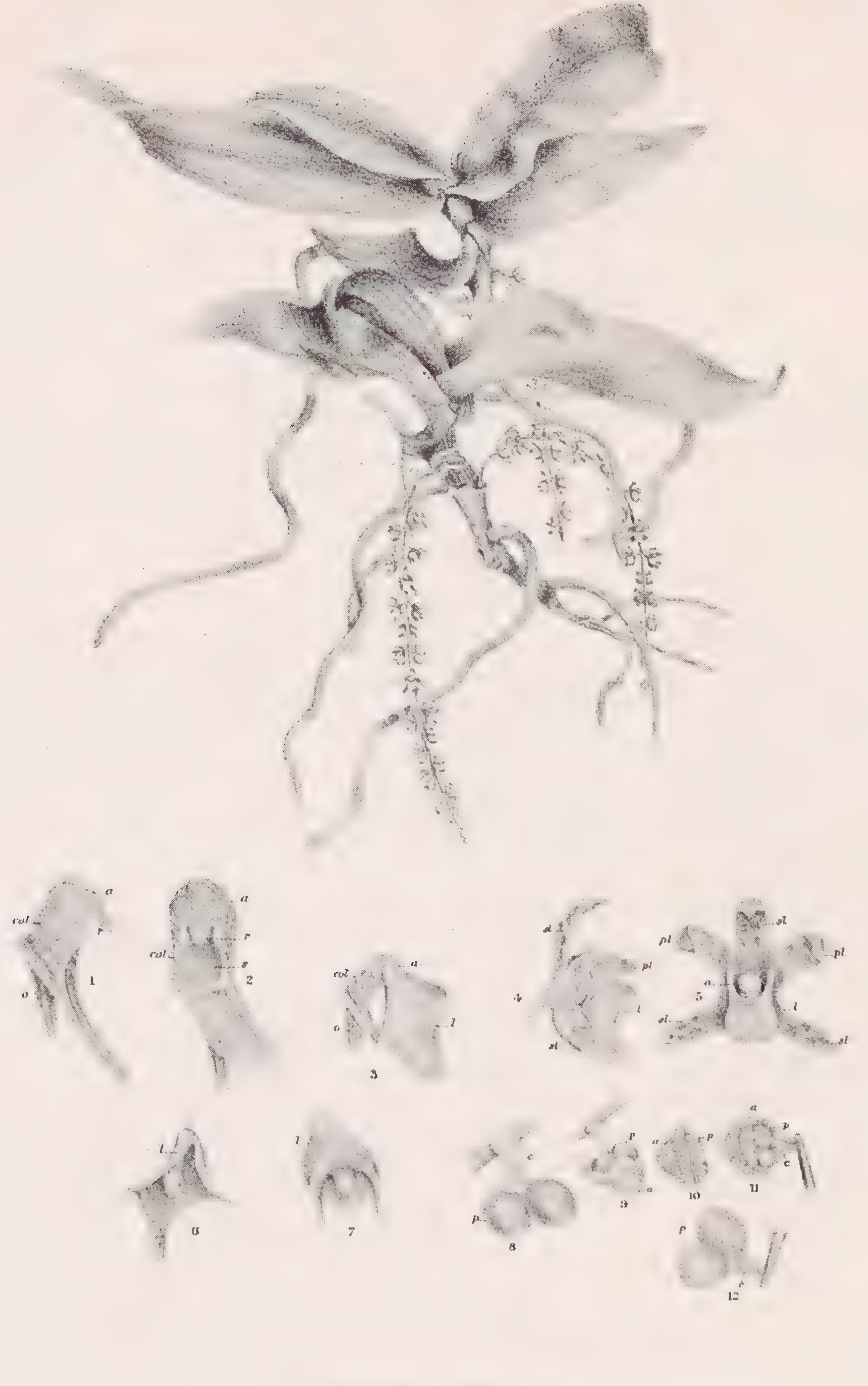
The principal distinctions between the species are as follow :—

Caladenia cucullata.	*Caladenia testacea.*
A robust plant, exceeding one foot in height.	A slender plant, from three to nine inches in height.
Dorsal sepal extremely concave, and suddenly curved forward over the column, in great part concealing it.	Dorsal sepal not nearly so concave or abruptly bent, leaving the anther exposed.
Dorsal sepal covered with a closely set granulation, grains (or glands) purple or white.	Dorsal sepal covered with clavate hairs of various lengths, separated from each other.
Labellum flat, the sides entire for two-thirds their length, then suddenly depressed to the purple extremity, which is crenate to the end.	Labellum less flat, that is, having deeper sides, entire for not half their length, then ciliate to the purple point, which is crenate to the end.
Sides of labellum spotted.	Sides of labellum plain.
Calli of the labellum in four rows, having their upper portions covered with fimbriæ.	Calli of labellum in two double rows, having the upper portion granular.
Column suddenly bent, spotted.	Column gradually bent, striped.

EXPLANATION OF PLATE.

Caladenia cucullata. Figs. 1, 2, and 3. Labellum, from the back, front, and side. 4. Calli of the labellum. 5. Column, from the side. 6. Column, from the front. 7. Top of column, from the front. 8. Group of calli, from the back. 9. Top of column, from the side. 10. Pollen mass, from the edge. 11. Pollen mass. 12. Group of calli of the labellum, from the side. 13. Dorsal sepal, column and labellum, from the side, petals and lower sepals removed. 14. Group of glands on dorsal sepal.

Caladenia testacea. Figs. 1, 2, and 3. Labellum, from the front, back, and side. 4, 5, and 6. Column, from the front, side, and back. 7. Pollen mass, from the edge. 8 and 9. Pollen masses. 10. Calli of the labellum. 11. Dorsal sepal, column and labellum, petals and lower sepals removed. 12. Glands or clavate hairs of dorsal sepal.



From Nature and on Stone by R.D. Fitzgerald F.L.S.

SACCOLABIUM Hillii.

Sydney, N.S.W., Thomas Richards, Government Printer.

Genus Saccolabium. *(Lindley.)*

Saccolabium closely approaches *Sarcochilus*, but it may readily be distinguished by the undivided pouch-like labellum. As yet only one species has been obtained in Australia, but, as it is an East Indian form, others may be found to the north.

Saccolabium Hillii. *(Mueller.)*

In *Saccolabium Hillii* the bird-like head of the column (fig. 1) seems to stoop to drink out of the labellum (fig. 3.)

If a small insect should happen to enter or fall into the labellum, which hangs upon an elastic hinge, it would in all probability be pressed or thrown against the under side of the bird's-bill (rostellum), which at once adhering would come away with the skull (anther) and upper mandible (fig. 11) from off the neck (column). On the first motion of the insect the skull (anther) would fall off (fig. 9), leaving the two lobes of the brain (pollinia) (figs. 8 and 12) ready to be inserted in the cavity of the stigmatic chamber (in the throat) (fig. 2), there to adhere and fertilize the flower. By such intrusion the pollinia may reach the stigma, but otherwise they remain in the anther, and the flower withers unfertilized.

Saccolabium Hillii is an epiphyte found in the "cedar brushes" as far south as the Clarence, and flowers in October.

In this species the pollen-masses are not, as given in the characters of the genus, either "four in pairs (or two deeply two-lobed)," but are very similar to the pollinia of some species of *Sarcochilus*, being two in number, waxy, globular, and united by a short flattened caudicle.

EXPLANATION OF PLATE.

Fig. 1. Side view of column. 2. Front view of column. 3. Side view of column, and labellum, petals, and sepals removed. 4. Side view of flower. 5. Front view of flower. 6. Section of labellum cut close to the internal spur. 7. Labellum, from above. 8. Pollen-masses freed from the anther. 9. Pollen-mass and anther falling off. 10. Anther containing the pollen-masses, from the back of the anther. 11. Anther containing the pollen-masses, from underneath. 12. Pollen-masses, from below.

MISCELLANEOUS NOTES ON AUSTRALIAN ORCHIDACEAE.

David L. Jones

Reduction of 6 species and 5 varieties to synonymy -

Synopsis: In this paper 6 species and 5 varieties of Australian Orchidaceae are reduced to synonymy. The reductions have followed examination of herbarium material and field studies.

Introduction: In the course of a study of some Australian Orchidaceae involving examination of herbarium material and extensive field surveys carried out by the author over the last 15 years, it became apparent that changes were necessary in several taxa. Much new material has recently become available as the result of an upsurge of interest in the family and from regional surveys, particularly those of Beauglehole. This material has enabled a clearer understanding of the limitations and variability within certain taxa.

Some are obviously far more variable than has been previously supposed.

Calochilus herbaceus Lindl.

Gen. & Sp. Orchid. Pl. 459 (1840).

After a study of Lindley's orchid types housed at Kew, George (1969) reduced Calochilus saprophyticus R.S. Rogers, to a synonym of C. herbaceus Lindl. He also suggested (pers. Comm.) that there appeared to be little difference between this taxon and C. campestris R.Br. and perhaps the two should be synonymized.

The only differences between C. campestris and C. saprophyticus lie in their respective leaf and tuber systems. C. campestris has a large fleshy, dark green, ribbed leaf and paired ovoid tubers. In C. herbaceus the leaf is replaced by pale thin-textured, yellowish bracts and the tubers are irregular with thickened proliferating roots. If the flowers only, of either species are examined there is no discernible difference. Nicholls (1943) claimed that there are differences between the flowers of each, but the only one he cited was that the column of C. herbaceus was more narrowly winged than C. campestris. I have found no consistent differences between the flowers of each, after examining numerous collections.

Beauglehole (pers. comm.) noticed an interesting relationship between the leaf development of Calochilus and the wetness of the site at an area near Portland. I visited the area and together we examined several specimens including the root systems. After these examinations and further field work I agree with George that C. campestris and C. herbaceus are merely variants of the one species.

The results of the study in the Portland area show that leaf reduction and saprophytic proliferation of the tubers are both correlated with the wetness of the site; and a clinal gradation occurs in both characters. Typical C. campestris are found on the dry raised sites and C. herbaceus in the sunken swampy sites with gradations in leaf reduction and tuber proliferation in areas between i.e. as the slope is traversed from the dry raised sites to the wet sites, the leaves become reduced and eventually bract-like and the root system proliferates.

Similar but less spectacular variations were also noted by the author in a swamp near the Wallagaraugh River in far eastern Victoria; although here forms typical of C. herbaceus were absent. At Anglesea C. herbaceus is found in yellowish clay soils which are very wet during the winter, but usually dry at flowering time. The leaves on specimens from this area were usually reduced to bracts although some gradations to short, thick, green leaves, were also noticed. No typical C. campestris were seen.

The yellowish colouration of specimens of C. herbaceus has been used as a distinguishing feature of the species. Certainly the plants from the submerged areas at Portland and Anglesea were yellowish, but this alone is an insufficient cause for separation, especially in view of the clinal links. Further it was noticed that the plants from Anglesea with short leaves were greener than bracteose forms.

It is interseting to reflect on the relationship between the two forms and their origin. The dryland leafy form (C. campestris)is certainly widespread (all states except W.A.) and more commonly collected than the other (C. herbaceus). Whether the wetland form has evolved from C. campestris to fill an available niche, or whether it is in fact, a relic form, is a question beyond the scope of this paper.

Microtis: I have become very familiar with the eastern species of the genus Microtis after examining hundreds of specimens in the field and in detail under the microscope. They are an extremely variable group of orchids and frequently variations exist within a single colony, or even between the upper and lower flowers on an inflorescence. The degree of lobing or truncation of the labellum apex and the size and shape of labellum glands are particularly variable features. As these are major features used in specific separation, there is no sound basis for the retention of M. bipulvinaris W.H. Nicholls, M. biloba W.H. Nicholls, and M. holmesii W.H. Nicholls.

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Miscellaneous Notes On Australian Orchidaceae. cont.

M. bipulvinaris W.H. Nicholls
Vic. Nat., 66 : 92 (1949). Type locality: Quail Island, Vic., leg. P.F. Morris, Sept. 1943. (type examined).
This species is purported to have two large cushion-like swellings at the base of the labellum and a slight granular excrescence near the apex. During the examination of several hundred specimens of *M. parviflora* R.Br. for a pollination study (Jones 1975), I noted the size of the basal glands as being particularly variable and excrescences to be present, or absent, on the labellum. As well, the basal glands of immature flowers are covered by nectar secretions and hence, are much less conspicuous than in older flowers where the production of nectar has ceased. Changes in labellum torsion also emphasise these differences between young and mature flowers. Neither feature could be used as a reliable indicator for separation of *M. bipulvinaris* from *M. parviflora*.

M. holmesii W.H. Nicholls
Vic. Nat., 66: 94 (1949). Type locality: Moe, Vic., leg. N. Holmes, Dec. 1946 (type examined)
The differences between this species and *M. parviflora* lie in the tightly revolute lateral sepals and the cordate labellum (± 3 mm long) with a minute callosity at the tip. All such variations may occur in *M. parviflora* and there is no basis for the retention of *M. holmesii* as a distinct species. The labella of *M. parviflora* vary from cordate to ligulate and may be up to 3 mm long. The rolling of the lateral sepals is a variable feature but is related to the age of the flower examined and hence is an unreliable character. Freshly opened flowers tend to have spreading sepals and these become inrolled, usually within two days of opening. The colonies of *M. parviflora* at the Moe locality exhibit no more variation than colonies of the species elsewhere.

M. biloba W.H. Nicholls
Vic. Nat., 66: 94 (1949). Type locality: Moe, Vic., leg. N. Holmes, Dec. 1946 (type examined)
The identification of *M. biloba* specimens has caused controversy ever since the species was described. Numerous collections have been examined and no justification for specific separation from *M. unifolia* (Forst.f.) Reichb.f. can be found. The labella of *M. unifolia* vary from truncate, through emarginate, to deeply bilobed, and all variations may be found in a single colony. This variation is further complicated because the degree of bilobing may vary with the individual flowers in an inflorescence.

Other factors purported for specific separation include a minute callosity near the labellum tip, recurved mucro on the underside of the sinus and a very short inflorescence (less than 6 cm). The presence of a callosity near the tip of *M. unifolia* is regarded as being unusual. In fact I have found labellum callosities or excrescences to be fairly common when flowers are examined microscopically and it is not a feature which can be emphasised. The interpretation by Nicholls of mucro on the sinus is rather puzzling especially as they are not distinguished in his drawings. I have not seen appendages which could be interpreted as mucro on any fresh material, nor where they were obvious on the type (although they would be difficult to discern on pressed material).

The short inflorescence is not really a character worthy of consideration as *M. unifolia* can vary from depauperate plants to vigorous specimens (as can some of the specimens fitting with other aspects of *M. biloba*). The yellowish tinge of the whole plant has also been mentioned, however this is a feature of the *Microtis* (both *M. parviflora* and *M. unifolia*) growing in the very poor podsols of the type locality at Moe. *Microtis* specimens also become yellower as they age and the late collection date (Dec.) and the swollen ovaries in Nicholls's (1969) painting show that the specimen was advanced in age.

Prasophyllum colemanae R.S. Rogers
Trans. Roy. Soc. S. Aust., 47:337 (1923). Type locality: Bayswater, Vic., leg. E. Coleman, Nov. 1922. (type not examined).
An analysis of the description of this species together with the illustration by Nicholls (1969) have convinced me that the taxon is a form of the variable *P. odoratum* R.S. Rogers. I have carried out a detailed study of *P. odoratum* and related species throughout Victoria (the results of which will be published separately) and the variation within *P. odoratum* easily encompasses *P. colemanae* and hence there is no basis for the retention of the latter species.

The main distinguishing features of *P. colemanae* were purported to lie on the ovate, shortly clawed labella and the lavender suffusions through the petals and labella. The labella of *P. odoratum* vary from ovate to lanceolate and I have found the presence or absence of the claw to be variable.

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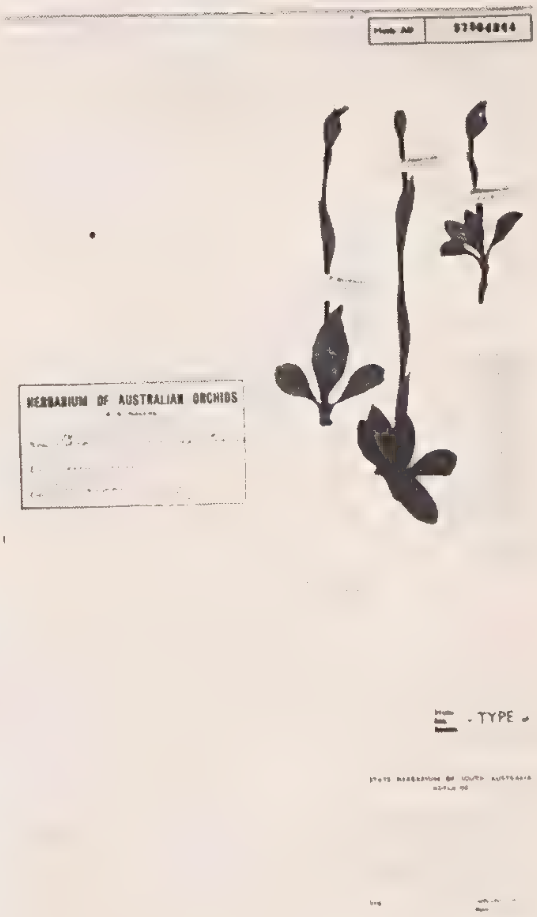
Miscellaneous Notes On Australian Orchidaceae. cont.

Colour is a very poor taxonomic feature especially in Prasophyllum and lilac and reddish suffusions are not uncommon in P. odoratum. Probably the two most colourful specimens of P. odoratum that I have ever seen were in the Ferntree Gully National Park, during October 1974 (only some 12 kilometres from the type locality of P. colemanae). Both had red and purple suffusions throughout the flowers and delicate lavender labella. They were growing amongst normal P. odoratum and bore a striking resemblance to the colour plate of P. colemanae by Nicholls (1969).
The type locality has apparently been destroyed by rail duplication work.

Pterostylis vereenae R.S. Rogers
Trans. Roy. Soc. S. Aust., 38: 360 (1914). Type locality: Cherry Gardens, S.A. leg. Miss V. Jacobs, Sept. (1912).
Examination of a photograph of the holotype of Pterostylis vereenae R.S. Rogers, situated in the South Australian Herbarium shows that the material is of Pterostylis foliata Hook.f. and hence P. vereenae must be reduced to synonymy under that taxon.
The correct identity of P. vereenae has been uncertain almost since the time it was described. Much of the confusion arose when specimens of a Pterostylis collected by Atkinson at Mount Bischoff in Tasmania, were identified as P. vereenae by Nicholls, even though they differed in important features (robustness, labellum shape).
Surprisingly, Rogers agreed with the inclusion after examining this collection (probably pressed). Plants from the collection have been illustrated in an excellent colour plate (Nicholls 1951, 1969) and the orchids figured are of an undescribed taxon which is fairly common in some parts of Tasmania (Curtis, pers. comm.) and which is quite distinct from P. foliata.



MINOR CHANGES

Caladenia reticulata R.D. FitzG. var. valida W.H. Nich.
Vict. Nat. 59: 189 (1943). Type locality: Portland, Vic., leg. F. Mellblom and A.C. Beauglehole, 1942.
A variety which is described as having larger flowers and leaves with the flowers being pale yellow. The author has examined numerous fresh specimens of this so-called variety sent by C. & D. Woolcock and A.C. Beauglehole from the Portland area, but can find no character to significantly distinguish these from other populations in Victoria. Particularly variable is the size and robustness of the leaf.

Diuris pedunculata R.Br. var. gigantea W.H. Nicholls
Vict. Nat., 49: 174 (1932). Type locality: Noble Park, Vic., leg. W.H. Nicholls.
The genus Diuris is particularly variable and will be the subject of a separate paper. Large flowered specimens of D. pedunculata are not uncommon, especially in western Victoria, but usually occur in colonies with varied size flowers. There is no justification for the retention of var. gigantea as a distinct entity.

Prasophyllum archeri Hook.f. var. deirdrae W.H. Nicholls
Vict. Nat., 49: 114 (1932). Type locality: near Maryborough, Vic., leg. A.H. Chisholm, 1932.
This variety, described from a single specimen, differs from the typical by having pale yellow drooping flowers with red and green markings and small labella. It is in fact nothing but a colour form of P. archeri and as such has no botanical standing. This form is common in some inland areas of Victoria but intergrades with darker forms. Similar specimens have also been received by the author from N.S.W.

Prasophyllum morrisii W.H. Nicholls var. contortum W.H. Nicholls
Vict. Nat., 59: 14 (1942). Type locality: Pyrete Range, Vic., leg. G. Lyell.
A variety which is purported to have large flowers than typical and the apex of the labellum with a peculiar undulate, somewhat contorted twist. Undulate and irregular margins are not uncommon in the labella of P. morrisii and there seems no justification for the retention of this variety. P. morrisii is in fact a very stable orchid exhibiting little floral variation. Flower size, however, is dramatically influenced by seasonal conditions, as witnessed by the

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Miscellaneous Notes On Australian Orchidaceae. cont.

author in a colony at Anglesea. Flowering plants were scarce in the season following the 1968 drought and individual specimens had fewer and smaller flowers than in the previous season.

Thelymitra ixioides Swartz forma. merranae (W.H. Nicholls) W.H. Nicholls
Vict. Nat., 60: 55 (1943). Type locality: Moggs Creek, Vic., leg. M. Sutherland, 1929.
This form is described by Nicholls (1951) as being intermediate between T. ixioides var. ixioides and T. truncata R.S. Rogers; with the column midlobe being widely dilated at the summit and not distinctly truncate. T. ixioides is an orchid variable in the extreme and there is no basis for retaining a minor variation such as forma merranae as a distinct entity.

ACKNOWLEDGEMENTS

The results of the study could not have been obtained without the assistance of many people. In particular I would like to thank A.C. Beauglehole for numerous notes and specimens, both fresh and dried. Collin and Dorothy Woolcock also provided much valuable assistance in the way of notes and fresh specimens. Others who contributed in a material way include K.C. Rogers, A. Peisley, B. Whitehead, S.C. Clemesha, K. and S. Black, J. Fanning, A. Cramm, R. Nash, T. Patullo, R. Allen, J. Sleep, R. Clark, E. Hart, V. Jacobs, A. and J. Norman, T.B. Muir, K. Ingram and A. Logan.

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D.L. Jones, Horticultural Research Institute, P.O. Box 174, Ferntree Gully, Vic. 3156.

A NEW RECORD FOR SOUTH-EAST QUEENSLAND

John Clarkson

A terrestrial orchid collected late last year by Mr M. Hall of Maryborough and forwarded to the Queensland Herbarium for identification was identified as Eulophia fitzalani F. Muell. ex Benth. This collection extends the known southern limit of this species by almost 200 miles. The species had previously been collected from areas north of the Fitzroy River.
Mr Hall reported finding only an isolated colony of plants beside the main railway line near Colton. He described the plants as being leafless, with flower spikes up to 20" high, greenish-brown in colour, with a few sheathing bracts and approximately 16 flowers per spike. The flowers were pale green in colour, about 1" across with reddish-purple veining on the sepals and petals. The labellum was very prominent, pale greenish-white and heavily veined with purple on the front and back.
The rhizome of this species is quite unusual. It is a large tuberous structure, irregular in shape, appearing not unlike a corm of ginger. The leaves are not often seen. They arise sometime after flowering has ceased and die back before the following year's flowering.

Extracted from "The Native Orchid Bulletin" of the Native Orchid Society of Queensland, page 32, Vol. 7, No. 9, April 1976.

TUBER BANK 1976

Peter Brown

Extracted from the A.N.O.S Victorian Group Bulletin, Vol. 9 No. 2 September, 1976.
The tuber bank is, of course, merely a method of distributing tubers annually, from those who have more than they need, to those who need more than they have. Basically it has three aims:-

1. To provide as many tubers of as many species as possible, and so, hopefully, reduce the drain on wild stocks.
2. To try to provide tubers of species which cannot be obtained from the wild and other sources (e.g. species from other States and rare and endangered species).

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ORCHIDS OF THE SOLOMON ISLANDS.

G.F.C. Dennis

I was interested to read, at page 48 of Vol. 5. No. 4. of The Orchadian, Mr. N. Howcroft's comments relating to the distribution of Dipodium pandanum - which he regards as being synonymous with Dipodium pictum, in New Guinea. As I have no description of D. pandanum available, I cannot comment on his assumption, but certainly D. pictum, as described and illustrated by Holttum, and determined by Kew from herbarium material in Honiara - our capital, on the N.W. coast of Guadalcanal - occurs throughout most of the Solomon Islands. It has been known to me, from Guadalcanal, since 1951, when I first discovered an extensive colony of this robust, epiphytic climber, at about2,500' elevation, inland (i.e. southward) of Gold Ridge, north central Guadalcanal, at a point where the high, steep-sided ridegtop narrows to some 40 or 50' width and the 35-50' tall trees become sufficiently scattered to permit bright but foliage-filtered sunlight to reach ground level from both sides and above. Hundreds of plants, both juvenile and mature grew out of, and scrambled over the deep, lightly moss-covered, leaf litter, many without any climbing supports, others climbing up to 25' and more, the bases, in some cases, dead or detached from the ground so that they were purely epiphytic. In July of this year, I again observed this particular colony during a plant collecting trip to 4,300' elevation, accompanied by a visiting horticulturist from Hawaii, my 28 year old son Tony, and 3 other companions, and it is virtually unchanged since my first observations were made.

In this area Dipodium pictum competes with other climbers such as Hoya spp., Aeschynanthus sp., and other epiphytic orchids, including Eria, Coelogyne, Dendrobium, Pholidota, and Bulbophyllum spp., while ground cover includes mosses, Dianella sp., and colonies of Calanthe chrysantha and Calanthe longifolia, and small terrestrial orchids. Only a few hundred yards along the ridgetop from this area, in considerably more shaded conditions, an unidentified Vanilla sp. grows high up tree trunks. It bears fleshy leaves up to 12" in length and 9" breadth, and I have observed the plant in only one other location, east of Parina village, also in central Guadalcanal at similar elevation.

Subsequently, I have found colonies of Dipodium pictum in the coastal lowlands of north Guadalcanal near Tenaru, and also eastward of the Toni River, growing in similar, side-lit forest verge locations in association with Hoya sp. and Freycinetia spp. - the latter being a genus of epiphytic climbing pandans of which many superficially resemble D. pictum (or D. pandanum). I have also observed D. pictum a short distance inland from Haleta village near Sand Fly Harbour, Nggela (Florida) Islands, north of Guadalcanal, growing on trunks of Pandanus sp., and in association with Freycinetia, Hoya, and epiphytic orchids of various Dendrobium spp.

During 1965, when for six weeks I was attached to the British Royal Society Expedition as a guide, Solomon Islands government liaison officer and assistant orchid collector to Peter F. Hunt (then curator of orchids at Kew), I found a further colony of Dipodium pictum at about 500-600' altitude above the confluence of the Warihito and Pegaso Rivers, east central San Cristobal - a very heavy rainfall area - where these plants were growing under the usual side-lit conditions, but climbing mainly in the trunks of a rare and handsome endemic pandan, Pandanus dei-montium, intermingled with a very similar Freycinetia on soggy ground which bore tall colonies of a sedge.

Again, early in 1971, I located a small colony of D. pictum growing at sea level, on this 9 mile round, high coral island of Santa Ana (which lies several miles off the south-easternmost tip of San Cristobal) within the narrow belt of tall Calophyllum trees and Pandanus: which grew and provided supports and shade for the plants immediately behind the unstable, peaty southern verge of shallow Lake Waipiapia - a remnant of the original coral lagoon. This 100' or so lake verge is water-saturated, and supports a heavy growth of tall Nephrolepis fern, sedges, pandans, sphagnum mosses and extensive colonies of the highly variable and adaptable terrestrial orchid Spathoglottis plicata which, in this unusual habitat, produces seedlings on partly submerged tufts of sedges, and adult plants which are subjected to temporary or permanent submergence, rarely develop the usual onion shaped pseudobulbs of dry land forms but, instead, thick elongated stems , and which, furthermore, due to their often unstable anchorage and rain-fed fluctuations in water level, occasionally proliferate and produce new planst from nodes in the stems which remain above water level, the submerged section subsequently dying. In addition, and still an unusual divergence from the normal forms of S. plicata in the Solomons, these wet-growing plants bear blooms which exude a faint, very fragrant, perfume - which I liken to that of Lonchocarpus - but fail to do so when removed to dry growing conditions, under which they also grow naturally here with the usual onion-like bulbous base.

In the early hours of 7th December, 1971, this area was devastated by a hurricane which

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Orchids Of The Solomon Islands. cont.

flattened villages, coconut plantations, forest and scrub, and the remarkable lakeside strip of mossy forest etc. with its special habitats and micro-climates was mostly destroyed, resulting in the complete disappearance of the D. pictum colony, in spite of the great number of small and large plants which had previously existed. At the present date, almost five years after the disaster, I have been unable to discover a single plant, in spite of diligent searching, although the area has made a rapid recovery, due to our excessive rainfall, and other temporarily lost orchid species such as Pseudaria similis and Vrydagzynea solomonensis in the same location, have reappeared. It therefore seems apparent that Dipodium pictum occurs naturally within rather specialised environmental conditions that may be available altitudinally from sea level (in a heavy rainfall area) to at least 2,500' elevations in the Solomon Islands. However, I have no record of its occurrence in our far south-eastern Santa Cruz Islands and other groups, which show some floristic relationships with the New Hebrides area. Incidentally, I have established plants of D. pictum, collected from the Gold Ridge and Toni River areas on Guadalcanal, in my own garden and the public botanic garden at Honiara under natural conditions, and may later reintroduce the species here, if it does not reappear naturally.

As a side-effect of the disastrous 1971 hurricane, it may be of interest to record that great numbers of robust, rapid growing, branching, scrambling and twining Galeola orchid vines - a saprophytic species, up to 40' long, reddish-brown or yellow in colour, of epiphytic habit in contact with tree boles and branches, and bearing a few, fleshy, green vanilla-like leaves just prior to developing its large, multi-branched, long developing inflorescence of relatively large, showy, scented, orange flowers - were to be found all over the island of Santa Ana, in the rotting logs and still standing dead trees wherever sunlight penetrated, prior to the now almost impenetrable forest regrowth. In one case, a Galeola had climbed almost 20' up a tall 'pawpaw' (Carica papaya), in the almost full sunlight of another of an old food garden site, and produced a multitude of blooms.

In conclusion, I would like to refer to Mr Peter Lavarack's letter, appearing in the same issue of The Orchadian, at page 39, and mention that Dendrobium johnsoniae occurs quite commonly on the 1,600' summit and elsewhere on the higher slopes of Mt. Austen (Nambulu), a mile or two inland from Honiara, N.W. Guadalcanal, where this species is invariably found only on the boles and branches of giant Calophyllum trees - probably C. kajeniskii. This area is subjected to annual 'dry' and 'wet' seasons - the latter coinciding with the so-called Nor West period of occasional strong winds and prolonged heavy rain storms from about November to April - with a rainfall of about 86" annually, being one of the driest (!) parts of the Solomons. I have collected plants similar to D. johnsoniae in other parts of Guadalcanal, on Kolombangara in the western Solomons, and elsewhere, always on Calophyllum spp., but none of these plants have produced blooms to enable me to confirm their identity.

Geoff. F.C. Dennis, C/- Postal Agency, Santa Ana 1., Solomon Islands.

COMMENTS ON "Dendrobium capituliflorum Rolfe In Australia".

D.F. Blaxell

I would like to comment on the note by the Editor on p.66 of Vol. 5, No. 5 headed Dendrobium capituliflorum Rolfe In Australia".

1. D. capituliflorum Rolfe cannot be endemic to Australia, since Rolfe's Type was collected in New Guinea.
2. If D. ophioglossum Reichenb.f. is considered conspecific with Rolfe's species (and I have not seen anything in print to indicate this) then Reichenbach's name has priority and D. capituliflorum Rolfe would be a synonyn of D. ophioglossum Reichenb.f.
3. In 1971, P.F. Hunt synonymised D. capituliflorum Rolfe under D. purpureum Roxb. (together with several other names) but no mention was made of D. ophioglossum Reichenb.f.
4. Dockrill, "Australian Indigenous Orchids", makes no mention of D. capituliflorum, D. confusum J.J. Sm. nor D. constrictum J.J. Sm. Schlechter, "Orchidaceen von Deutsch Neu-Guinea" synonymises Smith's two names under Rolfe's, but makes no mention of D. ophioglossum, certainly not in synonymy.
5. In fact, if D. ophioglossum is considered conspecific with D. capituliflorum then both will be synonyms under D. purpureum Roxb. However, I doubt that this is the case.

Could you perhaps publish this, since confusion will no doubt occur in some A.N.O.S. members' minds over the correct name for the "Australian" species, D. ophioglossum Reichenb.f.

D.F. Blaxell, Senior Botanist, National Herbarium of N.S.W.

A.N.O.S. 1976 ANNUAL GENERAL MEETING

The Editor

The Annual General Meeting of the Society was, beyond question, the finest, most informative held to date. To those who could not, or did not attend, my commiserations.
I shall not attempt to cover all facets of the meeting and instead shall try to highlight the most interesting points of the day.
As you will be aware, the A.G.M was held at the National Herbarium of N.S.W., through the courtesy of the Director and Chief Botanist, Dr L.A.S. Johnson. Mr D.F. Blaxell, Senior Botanist and our Society Referee, who, as our host for the day, gave unstintingly of his time and knowledge.
The neeting was opened by our President, Joe Betts, who welcomed members and visitors from many parts of N.S.W. Amongst many prominent members were: Bill Murdoch (Life Member); Harold Jay (Foundation Member); Eric Gordon (Life Member and Councillor since foundation); Lloyd Bradford (Councillor); Robert Lowe (Councilor); Norm Hilliger and Charles Fourro.
The throng included a very large contingent from the N.S.W. South Coast. These southern members attended as a preliminary to the formation of a new A.N.O.S. Group "South Coast".
Some of the many A.G.M. highlights were:
Life membership was conferred upon Fred Fordham, one of the nations greatest field collectors who worked assiduously collecting for the late Rev. H.M.R. Rupp for some 30 years. A singular honour for one of our great field naturalists.
The President's Report (refer p 75) which in some detail outlined our past history and future aspirations also pinpointed some of the problems providing challenges for your newly elected Council.
Your elected Council for 1976 - 1977 is:

President - Joe Betts	Editor - Murray J. Corrigan
Vice Presidents - Robert Lowe & Lloyd Bradford	Asst. Editor - Peter Vaughan
Hon. Secretary - Keith Edwards	Councillor - Garry Wells
Hon. Treasurer - Phil Collin	Immediate Past President - Eric G. Gordon

The Notice of Motion to amend the Constitution of A.N.O.S. as published on p. 65 of Vol. 5 No. 5 was unanimously approved.
The President announced that following the Hon. Secretary's negotiations with the Ryde School of Horticulture, the Council would in future, hold its monthly meetings in the conference room of this school.
The meeting decided that the audited 1975 - 1976 Statement of Receipts and Payments presented by the President should be accepted (unanimously) and NOT published within The Orchadian. Due to tremendous increases in paper and printing costs, it was decided that it was not of significant interest for publication, in view of its size and the material which would be omitted by its inclusion. Any member genuinely requiring a copy should forward a request, enclosing a stamped, addressed envelope, to the Hon. Secretary.
Our burgeoning membership was spoken about by several members and the President made the point that members in arrears with subscriptions would soon cease to receive The Orchadian. For their own sake, they should immediately remedy the situation and participate in the many exciting activities of The Society. Not the least being the new look Orchadian, bursting with interesting, informative material from old and new contributors.
At the conclusion of the A.G.M. the members adjourned for luncheon in the Royal Botanic Gardens Kiosk, where by arrangement, a special menu and wines were available to participants. After a leisurely lunch members were taken on a conducted tour of the gardens glasshouses by Mr Don Blaxell and Lou Forrest. This extensive tour covered all the glasshouses and their wonderful contents for some three hours. The climax of the day was the detailed inspection of the new "pyramid" glasshouse, some 60' square and 60' high. This structure has a 3 level tiered walkway, offering a grand display of orchids, trees and plants, both exotic and indigenous. All were showing evident signs of the loving care and attention they receive from Lou Forrest's men.
When next in Sydney, do not miss this gem!

Editor

REPORT ON A.N.O.S. SPRING SHOW 1976.

Norm Hilliger

Once again the annual show was a sound success, both financially and in the number of people attending. In excess of 600 for 2 days, compared to 380 over 3 days last year. This was due to better publicity in metropolitan press.
The Champion Native Hybrid was a fine plant of D. fleckeri X D. ruppianum owned by Ian Carter of Warringah Group and it is the second year a plant of this cross has been the Champion Hybrid.

continued p. 90

Report On A.N.O.S. Spring Show 1976 cont.

The Champion Native Species was a fine terrestrial *Caladenia carnea* owned by Peter Weston. There were only 21 exhibitors, made up as follows:

A.N.O.S. Warringah Group - 9
A.N.O.S. Council - 5
A.N.O.S. Sydney Group - 2
Berowra Orchid Society - 1
Manly-Warringah O.S. - 1
Ku-ring-gai O.S. - 1
Unknown - 2

who between them, provided a magnificent display. It is most disappointing to see the lack of support, even from our own members and it is hoped that in future there will be a better response. Special thanks must be given to the following for the long hours they gave in helping at the Show; Tony Hilliger, Charles Fourro, Bob Lowe, Murray Corrigan, Eric Gordon, Bill Westwood, Mrs Joan Cook, Karen Hilliger, Terry Cook and Chris Arnott.

The public showed such a great interest in all aspects of native orchids that it is recommended to Council that an endeavour be made to publicise the Society and its Groups in the metropolitan press throughout the year.

Norm Hilliger, Show Marshall

Editor's Comment on A.N.O.S. Spring Show 1976

Norman's report truly highlights some shortcomings in an otherwise excellent show. I am certain that Council will make the necessary moves to ensure that our next Spring Show is a resounding success. Norman has made a very great personal contribution to our shows which cannot be overlooked. A tireless worker, he attended every day of the show, opened the hall each morning and then proceeded to answer questions from the interested public and sell raffle tickets and plants. Truly an outstanding effort!

The Editor

CULTURE NOTES FROM THE MANNING RIVER DISTRICT

(Ted Gregory, who is well known to Australian native orchid enthusiasts on the north coast of N.S.W., as well as to members of the A.N.O.S. affiliated Blue Mountains & District Orchid Society. He has written some excellent articles for the monthly journal of that Society during 1976 and has now agreed to write for The Orchadian. The following short article may be taken as the fore runner to a much longer one entitled "Orchids of the Manning Area" which will appear in our next issue.

By way of introduction: Ted was born in the shadow of the Barrington Tops and more or less grew up with the orchids of that area. He has lived all his life "on the land" and his affinity and great concern for the land will be immediately felt by readers. He describes himself and his wife and family as nature fanatics. They live on Trotter's Island, which has an area of seventy acres and is situated in the Manning Delta just below Taree. He is a grower rather than a collector of orchids, having gathered both knowledge and plants from many of the old orchid growers; so that he has a valuable fund of orchid lore concerning not only what is endemic to the area but also what is no longer there - J.J.B.)

NATIVE ORCHID NOTES AND CULTURE - Spring-Summer, 1976

Ted Gregory

This is the time of the year when every native grower finds it extremely hard to concentrate on the mundane things of life: seems a shame to start the tractor up and replace the scent of pollen on the wind with deisel fumes.

The unusually wet Summer and Autumn that we had this year must surely have been to the liking of most genera as I have never seen such a flowering as is now cloaking this part of the world. The *D. speciosum* are just about finished and have done their job so well that they could be forgiven if they did not flower at all next season. In the nearby ranges the early *D. kingianum* are in their full glory in September-October and are succeeded by the later and bigger flowered forms which will last almost up to Christmas. Most local forms of *Sarcochilus* are also in their glory in September-October and to venture off the beaten track is to run the risk of squashing some poor terrestrial's Sunday best. I'd say there would be at least 5,000 individual flowers in our native house as I write this note (September).

Our main occupation at the present time is puffing with Diazanon dust to keep aphids and other bities off the flowers, this does a good job and does not mark the flowers; I am a bit of a believer in R.D.O. at this time of the year to help activate root growth and get the little devils about their business for next year. I use this once a fortnight and as soon as the weather warms up, on the in-between week, a dose of Nitrosol or something similar.

continued p. 91

Native Orchid Notes and Culture cont.

I water here with underground water with a very high mineral content, mainly magnesium, which also helps the growth of our plants a lot, I guess.
Our mixture for growing all epiphytes and some lithophytes is as follows:

- . pot bottom 1/3 full of chunks of sandstone,
- . the remaining 2/3 full 50/50 charcoal and red mountain oak bark.

The reason for the red oak bark is that it is very hard and absorbent, and will usually last till the plant grows out of the pot.
The charcoal and bark is hammered until it will go through a ¾" screen and then is passed through a ¼" screen. Everything that passes through the small screen is discarded and tossed into the Cymbidium mix. The coarse remains are mixed evenly and are ready to use. Natives will take hold in this brew in no time and will never get wet feet in it, no matter how you water. I am convinced that at least 80% of all native orchids in captivity are killed by wet feet and regard this as the number one hurdle for any tyro to negotiate. Once this is overcome, keep the slugs and snails out, an odd bit of feed and fungicide, now and again, and everyone will have natives flower as Nature intended them to, or a little bit better.

Ted Gregory, R.M.B. 201, Taree, N.S.W. 2430

A.N.O.S. FLASKING SERVICE

Peter Vaughan

So far we have has 11 flasks put down, 3 of which had non viable seed and the other 8 germinated well. Some Dendrobium dicuphum has been distributed and some deflasked. Other flasks that shouldn't be too far away include D. bifalce, a warm growing species from North Queensland and New Guinea, and D. smilliae ('alba' form), also a warm grower but an easier plant to grow.
Most of our species are finishing flowering so hopefully many of us have seed pods developing and these can be sent to our post box together with your cheque for the subsidised cost of $4 for the first flask and $2 for subsequent flasks. A very cheap flasking service and we can all do a big thing for conservation and start setting pods!

FORMATION OF NEW GROUP

Peter Vaughan

In October a group of A.N.O.S. members from the N.S.W. South Coast gathered together for the inaugural meeting of the Wollongong & District Native Orchid Society. In their midst are some very active members and all are very interested in the native orchids and saw the Group as a means of getting together to discuss and learn more about our native orchids. The keen interest of some members is shown by the fact that already they have made use of the A.N.O.S flasking scheme and they have many more pods developing, some of which they hope will be champion hybrids.
Anyone interested in joining this go-ahead Group can contact the Secretary of the Group -
Mrs Yvonne Parkinson, 23 James Road, Corrimal, N.S.W. 2518.
It is very pleasing to see such an interested group of people gathering together and A.N.O.S. will fully support any similar Groups.

AMENDMENT TO " A Critical Revision Of Some South Australian Native Orchids". Vol. 5 p. 65

Authorship of the entire paper should be corrected to read: R. Bates, Fairview Park, S.A., with the advice of Mr J.Z. Weber, State Herbarium, Adelaide Botanic Gardens.

BOUND COPIES OF THE ORCHADIAN

The Editor

Recent tremendous increases in binding costs require us to simplify the binding system for The Orchadian.
As of January, 1977, The Orchadian will not be available with hard cover binding. However, all is not lost, your Council is presently investigating alternative binding techniques which will not increase the present cost to members.

Tuber Bank 1976 cont.

3. To provide tubers in numbers for experimental, exchange and replanting purposes. (It's the only way I can think of to get rid of all those *Pterostylis nutans*, etc.).
Also, the tuber bank makes no distinction between colour, creed, race, religion or politics. Tubers will even be sent to growers in other States, territories or secessionist countries of the West. In fact, anyone who comes across a November Bulletin can write in and order plants. However, the only one thing that is always in short supply is the tubers. While pleased to see growers from other states taking an interest in our little tuber bank, it seems a pity that we never receive any tubers from them. Apart from increasing the supply, they could help increase the number of species available also.

"ORCHID TREK" by D.L. Jones

This wonderful little booklet was printed privately by D.L. Jones and details his experiences on an orchid trek to the north.
The work gives excellent advice on where to see many of the rarer plants growing in nature. It is not however, designed to tell you where to go for the collection of plants for yourself! Some 20 pages thick, the work is available from the Victorian Group. Whilst the price was not available to The Editor at time of writing, a letter to the Victorian Group Secretary Mrs Robyn Wootton, Flat 6, 10 Havelock Road, East Hawthorn, Vic. 3123, will secure you a copy. Alternatively you could be generous and enclose a cheque to cover the anticipated cost plus a donation to the Group, allowing them to print further informative and interesting works!

DENDROBIUM MOOREI F. Muell.

R.F. Walker

In the December, 1968 issue of the Australian Orchid Review, I had a short article on *Dendrobium moorei* published, with an illustration.
Some weeks later I had letters from various people in three states asking for back cuts, which I readily supplied. It would be interesting to know what results thay had with these. I thought that if this note were published, some of the recipients of the back cuts might reply to The Orchadian and their replies might be of interest to readers.
Dendrobium moorei F. Muell. is indigenous to Lord Howe Island but is easily grown in Sydney conditions; in fact I have been growing and flowering it at Lawson in the Blue Mountains for the last eleven years in a bush house which is partly opened to the north-east. Like *Dendrobium kingianum* it has aerial growths which will flower the first year if left on the plant. These aerial plants, if potted-on, after twelve months, will readily keep up a supply of fresh plants.
The plant produces flowers over a period of ten months in the year. The charm of these glistening white flowers was recognised in America by the Award of Botanical Merit.

R.F. Walker, "Seven Steps", 250 Great Western Highway, Lawson, N.S.W. 2783.

AN EXTENSION OF THE RANGE OF THE GENUS HABENARIA Willd. IN QUEENSLAND

John Clarkson

The known southern limit of the range of the genus *Habenaria* Willd. in Queensland has been extended by the recent collection of two species from the Lake Cooroibah area near Tewantin. The plants were found by Dr A.G. Harrold of Noosa Heads who sent them to the Queensland Herbarium. One specimen was identified as *Habenaria ferdinandi* Schlechter, the other could not be matched with any species known to occur in Australia and may prove to be undescribed. Further critical study will be deferred until fresh flowering material can be obtained next flowering season.

Extracted from "The Native Orchid Bulletin" published by the Native Orchid Society of Queensland. Support this Society by becoming a member. Whilst you may not be able attend their monthly meetings, you will be contributing to the study and conservation of the native orchids of Quuensland.

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All 55 issues of The Orchadian are still available from The Society at 60¢ each plus postage.

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Australasian Indigenous Orchids

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THE ORCHADIAN

Bound copies of The Orchadian are no longer available from the Society. Escalating costs and extensive delays in production have forced this decision upon us. Loose copies of The Orchadian will however, continue to be available. Loose sets of each Vol. cost Aust.$5.00 plus postage, individual copies cost Aust. 60¢ each, plus postage.

Remember A.N.O.S. Badges are available @ Aust. $2.00 ea. overseas Aust. $2.50. For details on our Flasking Service, read p.104 Vol. 5. send your cheque with seed.

The Orchadian - 15th year of publication, 55 issues, 714 pages of interest.

IT'S A SHAME ABOUT POOR PAULINE !

Ronald Kerr

Somewhat belatedly I call attention to the need for a long hard look at Joe Betts' recognition of Dendrobium Pauline as an Australian hybrid in "The Orchadian" of June 1976, p. 51.

The text gives the parents of D. Pauline as D. bigibbum and D. discolor. However there is no recorded registration of a mating between these two orchids. D. Pauline is a cross registered by the famous Stuart Low Nursery in 1932 and the given parents were Dendrobium phalaenopsis and D. undulatum. The latter is now established as a synonym for D. discolor. But, to assume that D. phalaenopsis is synonymous with D. bigibbum and is therefore Australian is against the weight of evidence.

FitzGerald named D. phalaenopsis on the evidence of one specimen given him by his seafaring neighbour, Captain Bloomfield, obtained the Captain said "near Cooktown", later amended to Cairns.

For many years, due to FitzGerald's unfortunate and unfounded belief that his single clone had come from the wild, some botanists, and virtually all horticulturists, assumed one of the forms of D. bigibbum to be D. phalaenopsis.

When the "Cooktown Orchid" was made the floral emblem of Queensland the late Dr S.T. Blake of the Queensland Herbarium was requested to finally settle the question of correct botanical identity.

Dr Blake's research was extensive. The results of his research were published in the Proceedings of The Royal Society of Queensland (see reference below). He states, "The name D. phalaenopsis FitzG. has been misapplied; it belongs to a distinct species from Tanimbar Is. (Timor Laut) that is not known in the wild state in Australia."

Blake's findings have been accepted by Dockrill and Lavarack.

The confusion in nomenclature was aided by the secretive attitude of early professional collectors, and Sander's agent Wilhelm Micholitz deliberately gave misleading information about the source of the many thousands of plants of D. phalaenopsis he sent to his firm.

These huge importations made D. phalaenopsis a deservedly popular horticultural orchid in Europe and later in America. To date it has been used as a parent more often than any other Dendrobium species or hybrid.

It was well established as a breeding orchid when Stuart Low used it in 1932.

D. bigibbum Lindl. was named in 1852 from a specimen collected on Mount Adolphus Island in Torres Strait. There was no recorded hybrid until 1962 when Limberlost Nursery of Cairns, registered two crossings. Up to 1970 only twelve registrations took place, only four of them of crosses made in Australia.

However much it may be regretted Dendrobium Pauline and its progeny D. Baily's Blue cannot be recognised as 100% Australian hybrids.

The matter does not end there because the horticultural merit of many clones of D. Pauline is considerable. Situations will assist where some judges accept it as an Australian hybrid and this could be unfair to exhibitors of plants with undisputed Australian ancestory.

References:

Blake S.T. (1964)"Dendrobium bigibbum, Dendrobium phalaenopsis and the Cooktown Orchid". Proceedings of the Royal Society of Queensland, LXXIV, No. 4 pp 29 - 44.

Blake S.T. "The Cooktown Orchid." Australian Orchid Review, March 1966, pp 29 - 32.

Dockrill A.W. "Australian Indigenous Orchids". D. bigibbum Lindl. pp 435 - 445.

Lavarack P.S. "The Cooktown Orchid - Botany and History". Australian Orchid Review, March 1976 pp 23 - 24.

Ronald Kerr, 57 Mount Pleasant Avenue, Normanhurst. 2076

MORE ON THE "COOKTOWN ORCHID"

The Editor

Readers may be interested to read the following synopsis extracted from Dr Blake's paper "Dendrobium bigibbum, Dendrobium phalaenopsis and the Cooktown Orchid", Proc. Roy. Soc. Qld. LXXIV, No. 4 pp 29 - 44.

"The Cooktown Orchid is referred to Dendrobium bigibbum Lindl. native to northern Queensland. The name D. phalaenopsis FitzG. has been misapplied; it belongs to a distinct species from Tanimbar Is. (Timor Laut) that is not known in the wild state in Australia. D. dicuphum F. Muell. and D. affine (Dcne.) Steud. are allied species from the northern Territory and

continued p. 95

More On The "Cooktown Orchid" cont.

Malaysia respectively. *D. bigibbum* var. *georgei* C.T. White, *D. bigibbum* var. *venosum* F.M. Bail., *D. bigibbum* var. *albomarginatum* F.M. Bail. non Linden (*D. superbiens* Reichb.f.), *D. fitzgeraldii* F. Muell. and *D. goldei* were based on plants of an introgressive hybrid series *D. bigibbum* X *D. undulatum* R.Br.; *D. sumneri* F. Muell. and *D. phalaenopsis* var. *compactum* C.T. White are *D. bigibbum*: other described varieties of these species are based on differences in size and colour of no taxonomic importance."

PLANT/ANIMAL HYBRIDS CREATE A NEW ERA IN BIOLOGY

The Editor

The following article has been extracted in full from the "New Scientist", 29 July 1976, pp 211. It highlights the incredible spectrum of scientific research technology.

A paper to be published tomorrow (Friday) describes the experimental fusion of an animal cell with a plant cell. The investigation, by Harold Smith's team at the Brookhaven National Laboratory in America, is in an early stage as yet, so it remains to be seen whether or not the interkingdom hybrid will be viable. According to British botanist Edward Cocking, Smith's results, together with similar studies in his own laboratory in Nottingham and those of Duditz and Lima-de-Faria in Hungary, mean that "we are entering a new era in biology". The animal/plant hybrid cells will have an impact both in understanding the mechanisms of gene control in the different biological kingdoms, and in the development of new forms of food from cell culture. Dr Who-like monsters, part man part plant, are unlikely!

Although it is a relatively recent trick, the fusion of cells to form unusual hybrids has become almost a routine part of experimental biology, and a particularly fruitful one too. But it is only now that boundaries between Nature's natural kingdoms have been violated by cell hybrids. Last year Cocking and his colleagues in Nottingham, together with Jack Lucy's team in London, persuaded hen's red blood cells to fuse with yeast cells. And earlier this year the Hungarians brought plants into the act by fusing carrot cells with HeLa cells (the tissue culturists' favourite cell line). The Brookhaven team have now joined in with a hybrid between cells from a tobacco plant and HeLa (Science, vol. 193, p 401).

Normally plant cells are surrounded by a tough wall made of cellulose. Inside this is a soft-walled bag, known as a protoplast, which contains the cytoplasm and other bits and pieces (nucleus, chloroplasts, etc) of the cell. Before plant cells can be fused the outer wall is dissolved away by enzymes, releasing the protoplast. Because of similarities in membrane composition, it is relatively easy to fuse protoplasts from different plants, but the union of plant protoplast and animal cell is remarkable. Researchers will be intrigued by the apparent ease with which membranes from the opposite ends of the biological kingdom can come together.

A major potential incompatibility between plant and animal cells, however, is presented by their nuclei (the bag containing the chromosomes), and particularly by the subtle interactions between the genetic systems in the chromosomes and the controlling elements in the surrounding cytoplasm. The Hungarians appear to have some evidence that the two nuclei can fuse together. And the Americans claim that the HeLa nucleus can at least begin to divide normally inside the hybrid cell. But the technical difficulties which all the research teams face (such as that of resolving the different growth requirements of plant and animal cells) are hindering the long term culturing of the hybrids. Thus the fate of the different nuvlei and their chromosomes remains to be settled.

The most probable outcome of culturing the hybrids is the complete loss of one set of chromosomes, probably the animal ones. The remaining cell would still be very interesting because it would contain a cocktail of plant and animal cytoplasm, bathing a plant nucleus. And it is now known that cytoplasm plays a much more active role in controlling cell activities than previously realised.

A plant/animal cell hybrid is of course an important example of genetic engineering, and one not without dangers. For instance, it would be possible to raise an innocuous-looking plant from a protoplast which had been fused with, say, a tumour cell, but had subsequently lost the animal nucleus. The remaining cytoplasm might contain subtle genetic elements involved with creating the cancerous state. Fortunately, however, unlike the bacterium *Escherichia coli*, the more usual tool of genetic engineers, a carrot plant would be less likely to "escape" from a laboratory.

AUTUMN CULTURE NOTES

Ted Gregory

As this note reaches you Summer is once again on the wane and our plants are headed toward another Winter, hopefully without too many super sized frosts and westerlies trying to put our bush houses plus contents into orbit.

Most of our native dendrobiums are maturing their new growths for the year, and perhaps some of the better growers have a second crop of leads coming along well and approaching maturity too. It is great to be able to coax that extra crop of growth as it can double your flowering for the coming season, but if one gets caught with a sudden cold spell it can be a dickens of a job to stop these late growths from damping off.

Although the abovementioned plants are easing up for the season, the Sarcochilus in general are now having their best burst of growth for the year; they really come to life once the worst of the heat and humidity is past and will grow merrily on into the winter, as long as the cold does not get too severe.

Even though a lot of my comments may apply to many orchids as regards culture and method and so on, I would like you to know that the two above groups have been my first loves and are the ones on which I base my notes and feel reasonably confident to comment on. Like many growers I have quite a lot of other genera, but I have not concentrated on them to the same extent.

I would say one of the main things to attend to at this time of the year is to see if there are signs of red spider having their final fling for the year. I think the chewing of these devils is the main cause of the fungus patches that appear on many leaves during the colder weather. A spraying of 'Kelthane' will fix these beauties, unless they have built up a resistance; then something stronger will have to be used. I am a great believer in not using anything atomic unless you have to, as once you get into the big guns there is no going back.

'Kelthane' can be combined with 'Melathion' to control hairy-grubs which also chew extremely well at this time of the year. A general fungicide can be combined with some fertiliser, such as R.D.O. and combined with the others mentioned above, can all be applied at once without any ill effect, which saves quite a bit of elbow grease!

Personally, I like to fungicide every four or five weeks, all the year round. I flog this prevention racket, don't I ? Once the weather cools down, insecticides and feed can be eased off, except on plants that are still showing growth. This slowing down of feeding goes on until the flower spikes start to show late in the Winter, then it's into it again.

Slugs and snails never let up and must be attacked all the year round. 'Baysol' seems to give good control of the European types which seem to do the most damage generally. For the results 'Baysol' gives, it is cheap if bought in 2¼ kg packs.

Sarcochilus types are not thrilled by contact with snail baits; so with these, place baits around the pot or basket, not on, or in them. It is a great help to have co-operative neighbours in the war against snails and slugs. If one can get general control in an area they are not nearly such a problem.

Cheerio and good growing till the next issue of The Orchadian.

Ted Gregory, R.M.B. 201, Taree, N.S.W., 2430

NEW ORCHID HYBRIDS

Joe Betts

Noted in "The Orchid Review" October, 1976, New Orchid Hybrids Registrations supplied by the Royal Horticultural Society as International Registration Authority for Orchid Hybrids.

Name	Parentage	Registered by
*PLECTOCHILUS (Plchs.)		
" Richard Jost	Sarco. hartmannii X Plrhz. tridentata+	J.E. Rumrill
" Rumrill	Sarco. ceciliae X Plrhz. tridentata	J.E. Rumrill

*Plectochilus = Plectorrhiza Dockrill X Sarcochilus R.Br. (recommended abbreviation for Plectorrhiza which is new to registration is Plrhz.)

+ This marks 1st occurrence as a parent in hybrid registration.

ERIC GORDON - THE OLDEST ORCHADIAN OF THEM ALL !

Eric's very many friends will be happy to know that he has just celebrated his 83rd birthday, (8-2-77) one week after leaving hospital (also a weeks visit) for a heart pacemaker insert. Needless to say he was back at work the same day they discharged him ! He and Bill Murdoch, his octogenarian mate are certainly made of sterner stuff than we lesser mortals!

ORCHIDS OF THE MANNING RIVER AREA

Ted Gregory

To anyone who is interested in Australia's orchids, the Manning area can be a virtual paradise, as within fifty miles of Taree one may observe a really grand cross section of the genera that one can expect to find in New South Wales.

Before I really get wound up on orchids, I would like to give you a little personal history which may help you to understand my point of view and explain some of the things I may say later on.

I was born in the shade of the Barrington Tops and more or less grew up with orchids as you may guess, and, living all my life on the land have developed a great affinity, as well as a great concern, for this same land. My wife and I have raised a family who are all nature fanatics, so over the years we have come to know the bush of our own area rather well.

I have not been a great collector, more a grower; this has been possible because, in my quest of knowledge I have cultivated the friendship of as many old orchid growers that I could track down. Most of these people are in their eighties now and sadly are disappearing, and more often than not, their priceless knowledge is going with them. As you know, most of these oldies love to pass on knowledge and plants to spread their influence; so through their generosity I have acquired a fair sampling of the orchids that are, or were, indigenous to this area.

I will start with the ones that were indigenous; by this method I should be able to end on a more cheerful note. The first that comes to mind is Cymbidium madidum which once abounded on the Brush Box trees of the river flats of this area. Of course, the first thing the settlers did was to clear the flats, so alas poor madidum. Now one must move onto the next river system to see C. madidum in her natural glory.

Another plant to become extremely rare, or extinct in the wild, is the local form of Sarcochilus hartmannii. Although not as beautiful as the Blue Knob form it is still a lovely orchid in its own right. However, there are many plants of this in the area, still in old collections. Here's hoping that pieces are passed on to growers devoted enough to ensure its survival. Sarcochilus ceciliae is also doubtful, although some may still survive in the more inaccessable gorges.

The most dominant species of this area to my knowledge would be Dendrobium speciosum and Dendrobium kingianum. I guess by right of size we will tackle D. speciosum first.

Alum Mountain at Buladelah is the northern limit of the short caned or Hawkesbury form as far as I know. Generally it is a superb form, long racemes and large flowers, both creams and whites are common. In this area almost all plants are rock dwellers, but as we go north to the Manning River, D. speciosum var. hillii takes over, almost all in the trees with only a few specimens on the rocks. Our local form is very variable, both in growth and flower. Most flower cream but there are a few lovely whites to be seen. I have one with three foot canes which are also very fat, yet it has the audacity to have the daintiest little flowers. I saw a "Corduroy Beech" (Sarcopteryx stipitata) tree 'dozed here a couple of years ago that bore fifty plants of D. speciosum var. hillii of twenty canes or larger.

Now we come to D. kingianum. I have a weakness for these little beauties, once I start on about these you will have to drop a brick on my cold foot to stop my raving. But surely there must be no other species anywhere with such variety in both growth and flowering habit. I have seen canes full grown at 2" and others 12" long and heavy enough to warrant a second look on the chance of being D. X delicatum. Their flowering season extends from mid-July to Christmas, which makes them a great asset in a bush-house, as a long period of flowering makes for more colour in the shack. As a general observation, I find the later a plant's flowering habit, the bigger the flower will be.

Anyone who has seen a rock or cliff-face covered in D. kingianum, must surely be stirred by the sight of a mass of these gems of nature. There is a single clone near Gloucester which measures roughly forty feet by forty feet. Only an ordinary pink form, but when seen with a few thousand flowers on board it's surely a sight to remember. In this area we have the Lansdowne Escarpment, a series of cliffs and hills much like your Blue Mountains; the face would be roughly twenty miles long, and instead of being sandstone like the Blue Mountains, it is all volcanic and conglomerate rock, with the tops of the cliffs averaging fifteen to eighteen hundred feet above sea level. The whole area was literally covered with a mixture of Blackbutt, Christmas Bush and D. kingianum and was truly a glory. However, a few years ago the Forestry Commission decided to clear-fall this whole area which was rather disastrous for the beauty of the area. I was amazed that many of the orchids of the place survived the following fires, but in a few years the area could be respectable to a certain extent once more. That is provided the Forestry can discover how to control Lantana!

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Orchids Of The Manning River Area cont.

Whilst talking of *D. kingianum* and *D. speciosum*, I guess a word or two on the native hybrid *D.* X *delicatum* would be in order. Although not common, it is an orchid of such beauty that you must pardon my raving for a little while. In the first place *D.* X *delicatum* was thought to consist of just a couple of clones, but I know one old grower who has bits of 37 different ones, and these were collected off just a part of this orchids range. Like all hybrids, it is extremely variable in growth and flower habit. I have seen plants with pseudobulbs 30" long and yet I have a good red that is doing well to make 6". *D.* X *delicatum* also has hybrid vigour in its growth habit as well, the clone known locally as "Comboyne white" covered a ledge roughly 35 feet by 4 feet. The "Comboyne white" is a wonderfully free flowerer; one small piece taken off it fills a plastic baby's bathtub now and cleans up at our local show every year. In areas where there is a mass of *D. speciosum* and *D. kingianum* this cross should keep on recurring if humans do not get too destructive.

Another common orchid in this region is *D. gracilicaule*, the often overlooked old "Brownie", as it is often called. Again an orchid of a really wide range, it thrives from sea level to over 3,000' in this part of the world. It really does wonderfully well on myrtle scrub ridges at around 1,000'altitude. I have seen trees in these places almost covered with *Dendrobium gracilicaule* and *D. beckleri*, plus an odd giant white *Sarcochilus falcatus* tossed in for good measure. Hereabouts the *D. gracilicaule* varies from the usual green with brown spotting, through yellow to orange, with almost red spotting. There are also rare clear coloured yellows and oranges which are very lovely. I was also lucky enough to be presented with a plant that is almost pure white. A while back I was raving about variations was I not ?

If there is any method in my madness at all, the next on the menu must surely be the glorious species *D.* X *gracillimum*. Surely a specimen plant of this orchid in full flower, in a fine myrtle tree, must be one of the most beautiful sights to be seen in our bush. Its habit much resembles *D. gracilicaule* although it is much rarer and like *D. gracilicaule* it will grow almost anywhere but has a distinct preference for those myrtle ridges. I have seen them flower from almost pure white, right through to almost orange, also with much variation in the size and shape of the flower itself. I have also collected a beautiful yellow and brown spotted form, just like a giant *D. gracilicaule*, this was a stroke of luck as the plant had been down for twelve months or more in a windrow to be burnt and the wallabies had eaten every leaf off it. Seeing as I do not like seeing orchids being burnt, I took it home and bingo, these marvelous speckled flowers. The first year I thought the speckles must have been on my eyeballs, but it flowered just the same the following year too!

I live on Trotters Island, which has an area of 70 acres and is situated in the Manning delta, just below Taree, and lo and behold, there is a big old black oak tree on the bottom of the farm with 4 beautiful plants of *D. teretifolium* and 1 lovely *D. beckleri* on it. The *D. teretifolium* are just going to break into flower and will soon be a mass of bloom, some racemes have 12 and more buds on this year. *D. teretifolium* is quite common on the lower river area, many of them dangling 7' or 8' from the branches in the River Oaks. Also common on the low country is *D. linguiforme*, clinging tightly to oak and tea-tree, almost invisible until it's flush of white reveals it in the Spring.

The only other terete *Dendrobium* that I know of as common to the area is *D. tenuissimum*, hiding high in the mountain oaks, its wonderfully frail habit makes it almost unseen from the ground. This orchid is quite common in this area from about 1,500' altitude and above. It is one species that suffered severely in the snow that we had here last year. The snow broke the heads of a high percentage of the softwoods in this area, bringing a huge part of the orchid population to the ground.

Another *Dendrobium* that I should have classed in the highly endangered species of this area is *D. falcorostrum*, the glory of the Negrohead Beech forests (*Nothofagus moorei*). I do not know if it was ever prevelant in this district, but I should say that it must have been in the higher country before the white man was turned loose with the axe. I have only seen 3 plants of it in this area in the wild; 2 of these were growing on water gums and 1 on a river oak. Happily, as far as I know, two are still growing there and doing well. Funny isn't it, when *D. falcorostrum* is only supposed to grow on Negrohead Beech!

This orchid business is a bit of a trap isn't it? Just thought that I was running out of local *Dendrobium* when I remembered my square pseudobulbed old mate, *Dendrobium tetragonum*. It is fairly easily seen along the water courses about here and up to about 500' altitude. In the North of this zone there is a superb form that carries up to 28 flowers to the raceme and is much more vigorous than the general run of plants about here.

Dendrobium cucumerinum is a weird and wonderful species of orchid, one I think which could

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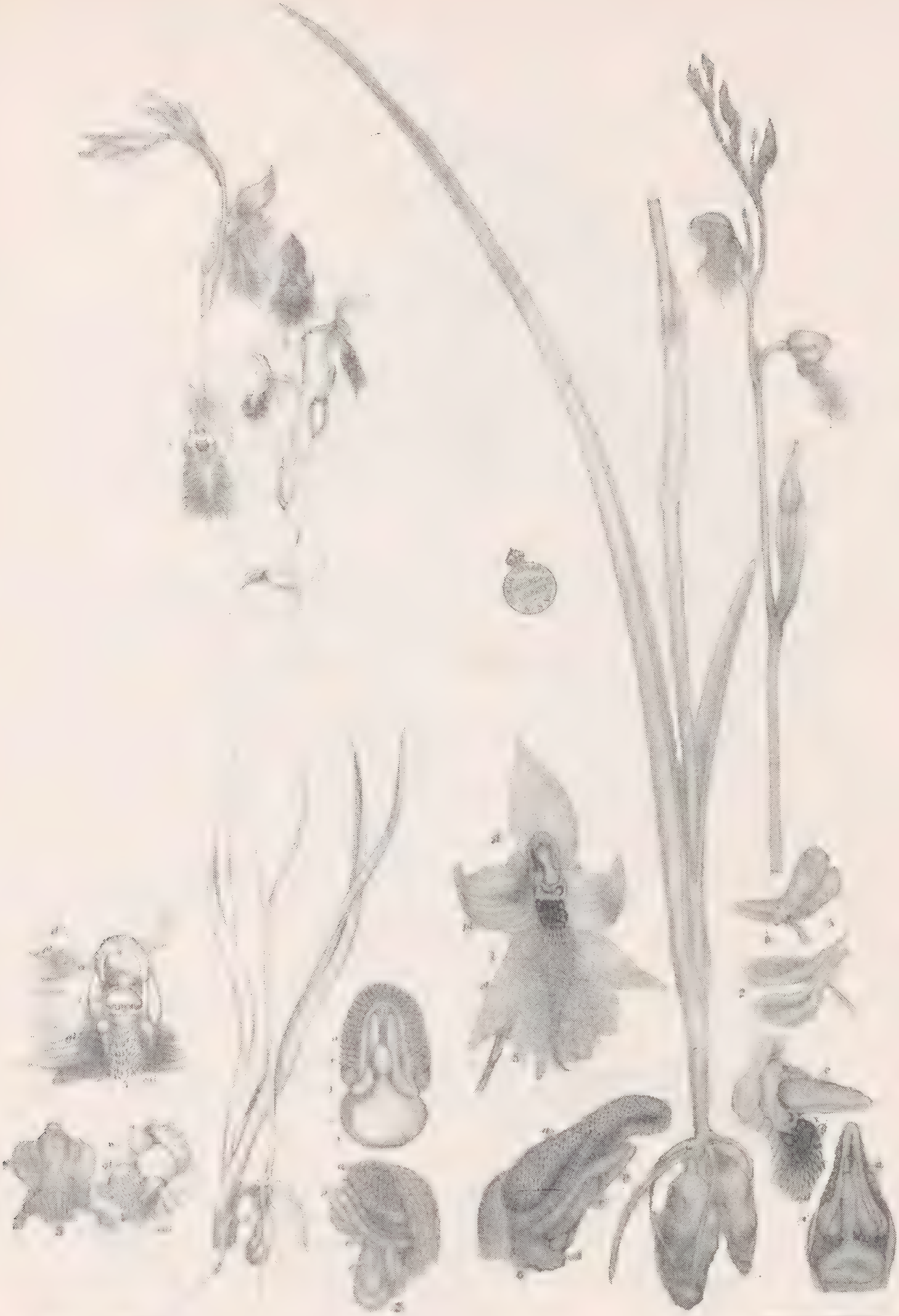


CALOCHILUS

Paludosus.

Campestris.

Calochilus paludosus. (*R. Brown.*) Calochilus campestris. (*R. Brown.*)

THE most salient points of distinction between *Calochilus paludosus* and *campestris* are—in *C. paludosus*, the short anther, the castellated bar across the base of the stigma, the two glands on each side, and the red colour and straightness of the hairs on the labellum; in *C. campestris*, the great length and flatness of the anther, the calli on the base of the labellum numerous and alike, the long hairs of the labellum curled and barred with red, and the bright blue colour of the base and centre of the labellum.

C. paludosus and *C. campestris* are both self-fertilized. The rostellum is not connected with the pollen-masses, and seems only to act as a support to them; they protrude beyond it on each side and beyond the upper part of the stigma, and rest upon the edge of the stigma and slightly on its front (figs. 1 and 2 and figs. 4 and 6), except in the early bud, thus actually embedding themselves in its substance as its surface gradually liquefies into a viscid secretion. By this arrangement every flower must of course be self-fertilized, unless the pollen is early removed or other pollen is placed on the stigma and is more potential than its own.

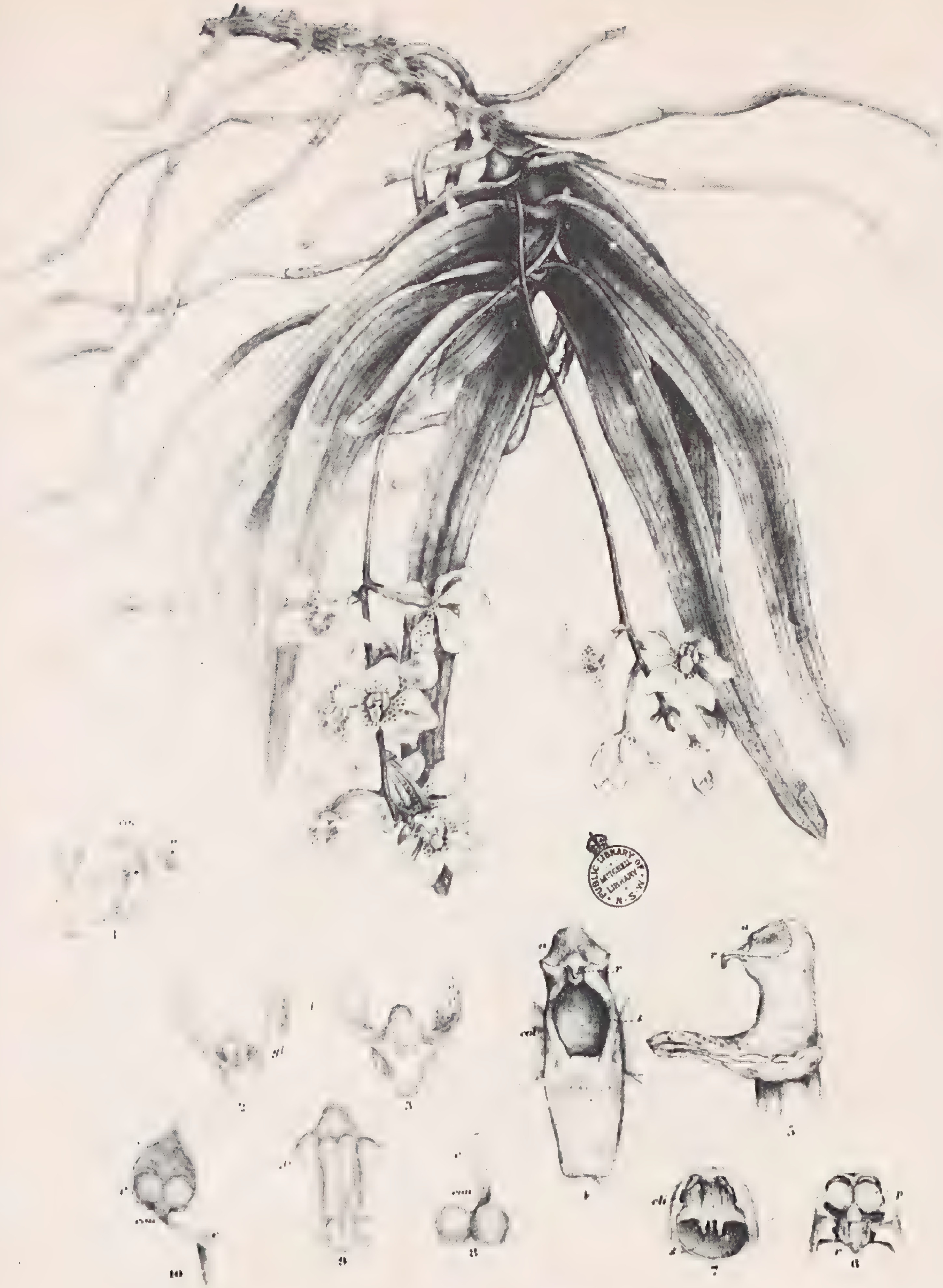
Either of the above alternatives, in my opinion, seldom or never occurs, as the rostellum is not removable and is not attached to the pollen, and the pollen-masses themselves are not to be removed by moderate force when once connected with the stigma, which is early the case. In the very many flowers I have examined I have never found the pollen removed or any pollen on the stigma. Every flower produces seed, though the plant be placed under a bell-glass in early bud. If, however, the pollinia are removed from the buds no seed is obtained, unless (when the flowers are sufficiently advanced) pollen of either species be placed on the stigma, when they again become fertile.

Though the names attached would lead to an opposite conclusion, both species are found in similar situations, in poor sandy soil, on rocky spurs, under shrubs, and even in open forest. The time of flowering is October.

EXPLANATION OF PLATE.

Calochilus paludosus.—Fig. 1. Stigma and anther, from the front. 2. Stigma and anther, from the side. 3. Column, from the front, showing parts of labellum and perianth. 4. Side of column, showing part of labellum. 5. Back of column.

Calochilus campestris.—Figs. 1 and 2. Pollen-masses. 3. Column, from the side, showing part of labellum and perianth. 4. Stigma and anther, from the front, anther drawn back, the pollen-masses being thus raised off the stigma. 5. Flower, from the front. 6. Column, from the side.



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SARCOCHILUS Fitzgeraldi.

Sarcochilus Fitzgeraldi. (*Mueller.*)

THIS is one of the prettiest and rarest of our epyphites. It has been named by my friend, Baron Von Mueller, from specimens procured by me in a deep gorge of the mountains at the head of the Bellinger River—one of those numberless ravines that terminate in precipices down which innumerable streams fall from the table-land into the deep darkness of shadowing tree-ferns, palms, and fig-trees.

Within the spray of the Naroo Falls and the surrounding streams, *Sarcochilus Fitzgeraldi* was found in masses clinging to the dripping rocks, and covering the black basalt with its green roots that stretched for yards over the smooth surface, and followed the mossy crevices. With it were associated a strangely proliferous form of *Dendrobium Kingianum* and clumps of *Sturmia reflexa*, while to the small branches of bush and tree clung the little *Oberonia palmicola*, *Dendrobium aurantiacum*, and *Sarcochilus olivaceus*, and upon the fallen trees grew wonderful old plants of *Dendrobium Hillii*. The rich vegetation, black basalt, and white foaming river, with glimpses through the tops of the trees of the ever-falling water, made one of those rare spots in which the world is forgotten and the longings of the naturalist realised.

In the figure of this *Sarcochilus* only one branch or plant is given, but it produces off-sets and thus becomes a thick mass of pendent leaves, through which numerous flower-stems protrude. It is a free flowerer, a small plant grown in a "bush-house" frequently producing from forty to fifty flowers.

It bears culture better than any other in the genus with which I am acquainted, and if placed on a moss-covered rock and kept damp, bears well removal to the "bush-house."

It is dependent on insects for its fertilization. At the Naroo Falls many of its leaves were found to be eaten, probably by a species of wood-louse or sand-hopper (*amphipoda*), which was numerous beneath the clumps; and those insects are, I believe, the principal agents in conveying the little globular pollen masses into the stigmatic chamber.

In the introductory remarks I referred to this supposition, and suggested that in like manner the long tails of *Angræcum sesquipedale* may be attractive as delicate food, and consequently be attacked by insects that in the course of their depredations become the means of its fertilization. This idea has, I think, been strongly supported by a remark I have since noticed in "My Garden," by Smee, page 302, in which he says, referring to *Angræcum sesquipedale*—"It is remarkable for its having a long appendage which the crickets delight to eat, making the flower look ridiculous."

S. Fitzgeraldi flowers in November.

EXPLANATION OF PLATE.

Fig. 1. Side view of labellum and column, petals and sepals removed. 2. Labellum, from the back. 3. Labellum, from the front. 4. Column, from the front. 5. Column, from the side. 6. Top of column, anther removed. 7. Top of column, anther, rostellum, and pollinia removed. 8. Pollen masses, with caudicle and rostellum. 9. Glands on labellum. 10. Anther removed and still attached to pollen masses.

Orchids Of The Manning River Area cont.

stand more frost and cold than most of our natives, as the weather can sure get cold on the upper reaches of our river where D. cucumerinum grows. It really thrives on the older oaks, with a good coat of bark on them. It grows so tightly to the bark that one may see it growing right to the ground, even where cattle are prevalent.

Dendrobium pugioniforme can be seen in profusion in most of the higher brushes in this part of the world, with its pendulous growths hanging many feet and laden with moss, till one would think its own weight would bring it down.

I have been that interested here in writing about the genus Dendrobium of the brush forest that I forgot the one and only D. aemulum. There is a lot of this species about here. but as its hosts, the ironbark and brush box are both prized by the Forestry, it has rather a doubtful existance. Saw an ironbark in the local B.H.P. mill one day with over 150 plants on it, going up the chute. There are some brush boxes in the Ellenbough National Park here which are just a mass of D. aemulum, with a bit of luck they should be safe there.

No account of the orchids of this area would be complete without a mention of Dendrobium X suffusum, which was discovered on nearby North Brother Mountain not that many years ago. This natural cross of D. gracilicaule and D. kingianum was never plentiful, but there have been some beautiful clones discovered. Most plants have thrown to D. gracilicaule in their habit, but I saw one that had been collected fairly well inland a couple of years ago which had more of a D. kingianum type flower. I was lucky enough to be given a piece of it and it is growing and flowering well however it persists in throwing aerials. One plant collected years ago at Lansdowne is a huge grower, canes roughly 24" long and heavy.

Well I think I've got over a few of our local Dendrobium orchids, so we will give some other genus a bash for a change. As I seem to have been wandering on in my own little way with my own preferences, my next preference is Sarcochilus, so here we go!

Far and away the most common Sarcochilus of this area has to be S. falcatus, and as far as I am concerned, the message is ' viva la falcatus '. This orchid is really a gem of the rainforest with its fabulous iridescence. They also have a very long flowering season; from July, till at least Christmas. Some forms are so different that they are almost another sub-genus in my imagination.

I will start with the form that grows in my immediate neighbourhood. This form is an early flowerer, normally opening about the end of July - not a big flowerer but it has a heavily marked labellum. The local form grows keikis very easily and grown into great clusters, I have measured one cluster at 28" across. A form with similar flowers, without the keiki habit, is fairly widespread over most of the district but once we get inland they flower much later. The species seems to grow at any altitude to over 3,000'. As a bit of a sidestep, that famous pink S. falcatus could have been looking down on me as I went to school years ago. These S. falcatus that I have been writing about normally have a flower measuring around the ¾" mark. There is also a clear white form found above 1,000' altitude that has a flower of about 1" in diameter.

The daddy of them all is the giant white form which is found mainly in myrtle scrubs at the 1,500 - 2,000' altitude. These have a flower that may measure up to 2", though the average would be around the 1½". There are two different forms in these big boys too, one that is more or less a starry flower and the other that stays more like a Cymbidium flower shape. Alas, I have only ever found these growing in two isolated areas, one of which has since been dozed to make way for cattle.

Sarcochilus olivaceus is also quite common in some areas where conditions are suitable for its requirements and the sane applies to Sarcochilus hillii; both of these grow best under special conditions which rather restricts their range.

Another that favours the myrtle ridge country is Rhinerrhiza divitiflora, the old three day wonder, as it is known at times. There are some huge plants in this area, up to 14" across the leaf-span. A plant with 10 - 20 flower spikes on it really puts up a show, even if only for a day or two. This is another species that will keiki at times and grow into really large clones.

Bulbophyllum is another group well represented about here and is well worth a word or two. Seeing I have been writing a lot about myrtle scrub I will mention Bulbophyllum elisae first as this is the home ground of this orchid too. There are some really beautiful pure green forms of B. elisae to be found about here.

Bulbophyllum aurantiacum is also to be found in this same environment. Bulbophyllum exiguum and B. crassulifolium are also here, but in much lower regions than the ones I mentioned first.

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Orchids Of The Manning River Area cont.

It seems strange to write an article without mentioning cymbidiums, so I must correct this. As I mentioned at the start of this article Cymbidium madidum is extinct in this area as far as I know and our only native representative in these parts is Cymbidium suave, generally a clear brownish-green form is the norm for our part of the world, although there are odd beautiful clear green ones to be found in some areas.

Well, I have covered a few of our indigenous orchids in this article, but I guess I have missed as many as I have mentioned, but more of them another day. I regret that I have not got a very wide knowledge of our terrestrials but I hope that the above has been of some interest to our members.

Ted Gregory, R.M.B. 201, Taree. N.S.W. 2430

A.N.O.S. ORCHID SEED FLASKING SERVICE

Editor

Your Council must advise members that effective immediately, there will be a small increase in cost for the service. The new scale of charges will be -

Cost to member $6 for first flask (original mother flask & first re-plate flask) plus $4 ea. for subsequent flasks from that mother flask. The mother flask will of course, be retained for re-plating by our flasking service. Should your seed not germinate the Society will refund all but $3 of your costs for each pod.

Remember: Your cheque with seed, otherwise we cannot proceed until we have your payment.

Do not forget to give us your name and address, name of species and where possible, the date of harvesting the seed pod.

A.N.O.S. reserves the right to limit the flasks of any one species to such a number as it may determine from time to time, and to retain any surplus seed for conservation purposes.

For complete details on this A.N.O.S. service, see The Orchadian, Vol. 5 p. 20.

Dendrobium insigne Rchb.f.

J. Dodd

Plant: Plants consist of clumps of many stiff, wiry stems, up to about 30 cm in length. Mature stems are leafy only in the lower half. Leaves are not typical of this section (Grastidium) in which it is usual to find narrow, grassy leaves; instead, D. insigne has broad fleshy leaves that resemble those of a Ceratobium Dendrobium. The roots are up to 4mm. thick, with a large green growing tip.

Flowers: Flowers are borne in the way characteristic of other members of the section, i.e. in pairs, on the upper leafless part of the stem. The flowering sites can be identified by the presence of flattened bumps on the stem. Each flower is about 25 mm in diameter; the petals and sepals are similarly coloured, being orange-yellow with red-brown spots and flecks. The lip is white, jagged along the edges and on the upper surface. They are very fragrant, although not all plants are equally so, and unlike nearly all others of the section, the flowers last for two days, not one. The two flowers are carried on a common stalk. Several pairs of flowers can occur along the stem at one time.

Distribution: This species is fairly widely spread throughout the lowlands and islands of Papua New Guinea. It grows as an epiphyte. I have found it on thin branches at the back of a mangrove patch near Hula, where it revealed its presence by the strong perfume of the flowers. I have also collected plants of it from Kuriva, north of Moresby.

Extracted from the 'Newsletter', September, 1976, of The Orchid Society of Papua New Guinea, with the permission of the author & President Mr. Jonathan Dodd.

Pteroceras spathulatus (R.S. Rog.) Garay IN SOUTH QUEENSLAND

K.W. Crouther

I have been a member of A.N.O.S. for many years and have always found much of interest in The Orchadian. I hope that the enclosed sketch and description of an orchid which is currently in flower may be of interest to other members also.

The plant shown full size in sketch (a) was found in the border ranges district south of Brisbane. It was lying on the ground after some very strong winds had been blowing in the area.

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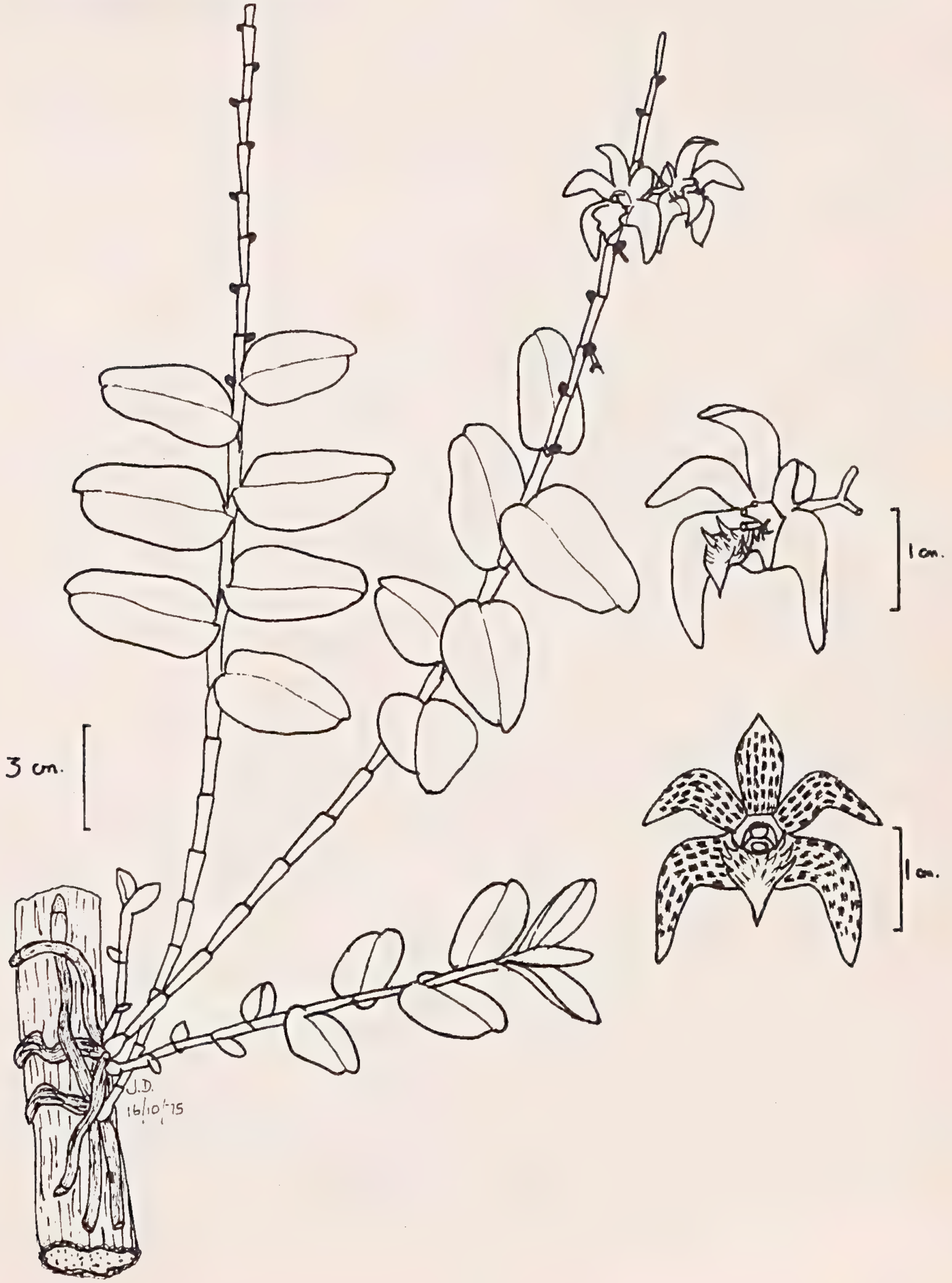
Dendrobium insigne Rchb.f.


3 cm.
1 cm.
1 cm.
J.D.
16/10/75

Pteroceras spathulatus (R.S. Rog.) Garay IN SOUTH QUEENSLAND cont.

On bringing the plant home, I tied it to a piece of 'coolite' and staghorn fibre. It has flourished in a shade house at sea level, 700 miles north of its original location.
My study of "Orchids of Australia" by W.H. Nicholls and "Australasian Sarcanthinae" by A.W. Dockrill, have not identified the plant. The flower, shown 3 times natural size in sketches (b) and (c) is pale yellow-green with distinct brown blotches on each petal and sepal. The column has two distinct purple lines running parallel from the pollinia to the base of the labellum. The labellum itself has brick red lines on the lobes, a prominent purple mark on the lip and lines of red spots on the lower section of the labellum.

"Mr Don Blaxell of The National Herbarium has identified the orchid as Pteroceras spathulatus (R.S. Rog.) Dockr. from the beautiful colour drawing and description supplied by Mr Crouther. The Editor regrets that our printing costs prohibit the introduction of colour printing in The Orchadian."

Kevin W. Crouther, c/- Amalgamated Sugar Mills Pty. Ltd., Pleystowe, Qld. 4741

SOME NOTES ON ORCHIDS AND OTHER PLANTS AT BAMAGA

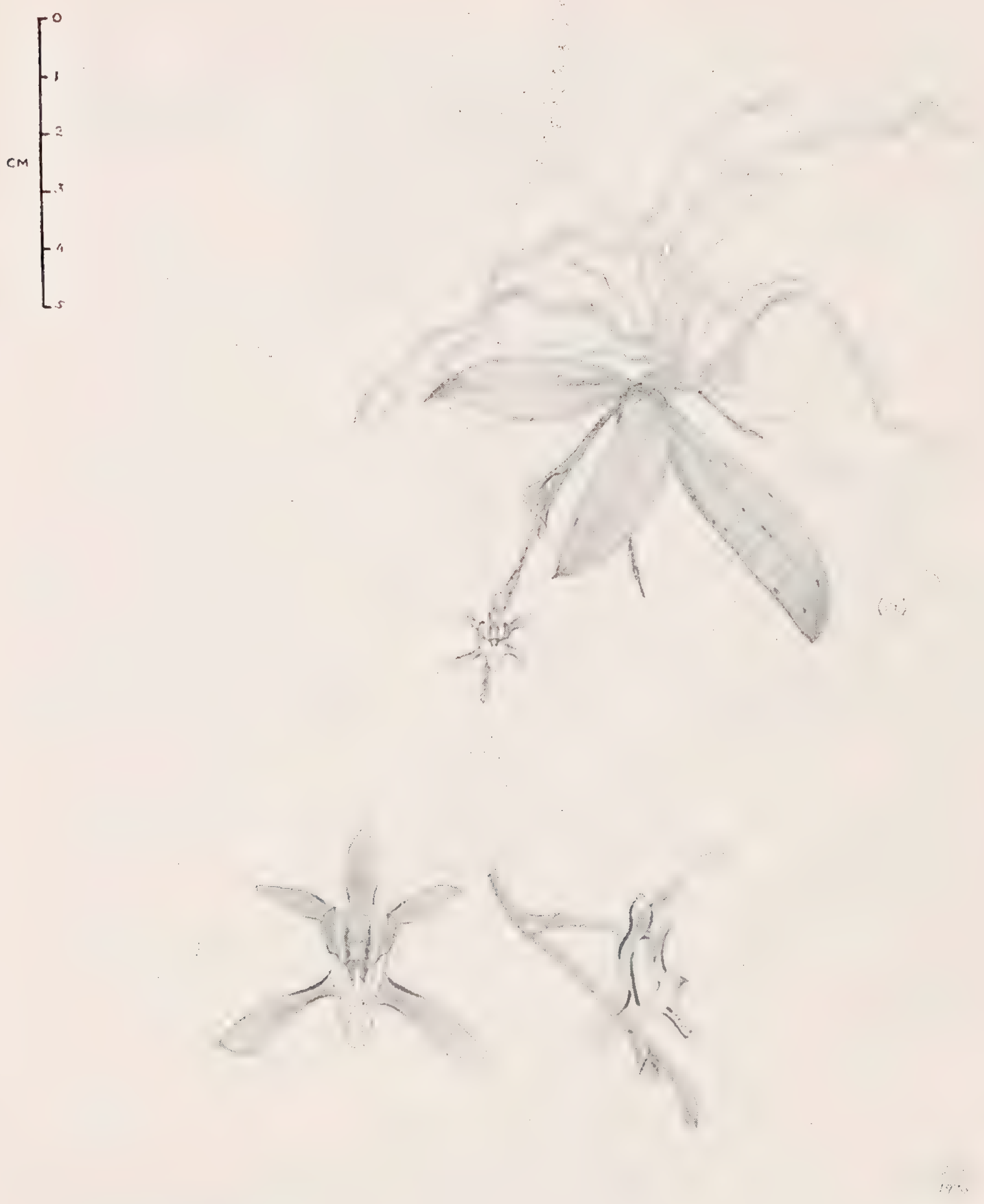
P. Lavarack

Extracted from "The Native Orchid Bulletin" of the Native Orchid Society of Queensland.

In December last year I visited Bamaga as part of my work with the National Parks and Wildlife Service of Queensland.
Bamaga is an Aboriginal Community situated on Cape York Peninsula about 40 kilometres north of the Jardine River and about 6 kilometres inland from Red Island Point on the west coast. The Bamaga area which includes the settlements of Red Island Point, Umagico, New Mapoon and Cowal Creek is one of the larger Aboriginal Communities being home to some 2,000 people. However, the area around the most northern parts of the Peninsula is still largely untouched by man. There is a good road leading to Somerset and a series of tracks ranging from good to very rough so that most areas are reasonably accessible.
Almost all the country north of the Jardine River is very flat and low lying. The Great Divide in this area barely reaches 100 metres. There are some hills near Cape York and near Peak Point which reach 150 m maximum altitude but for the most part the terrain could be described as "easy".
Along the eastern coast are large areas of vegetated sand dunes with a few large fresh water lakes, but generally speaking the porous nature of the soil which is mostly derived from sandstone means that water is scarce despite the relatively high rainfall.
Before discussing the plants of the region - a few words about history. The Bamaga to Cape York region is exceptionally rich in historical links ranging from 1770 to 1942.
Possession Island, where Captain Cook landed to claim the east coast of Australia for Britain, lies only 3 km off the north west coast. Perhaps the most interesting of all the historical aspects of the area are the ruins at Somerset. This was the scene of the Jardine Homestead which, in 1863, was set up as a northern outpost. Originally it was hoped that the settlement would become "The Singapore of North Australia" and Jardine was given the title of "Resident".
However the unsatisfactory nature of the harbour eventually saw the official government side of the undertaking moved to Thursday Island. When John Jardine left in 1865 he was replaced as Resident by his son Frank who, at the age of 22, had already made a name for himself by overlanding a herd of 250 cattle from Bowen to Somerset - a distance of 1,000 km through unexplored country. Frank stayed at Somerset until his death in 1919. The houses built by Jardine at Somerset and at Lockerbie to the south have now largely gone but at Somerset two cannons still point out over Albany Passage while Jardine himself also keeps watch on the picturesque waters from his grave behind the beach.
Of more recent origin are the wartime aeroplane wrecks dotted around Jacky Jacky airstrip. Known as "Higginsfield" during the war, this was a major base as is testified by the thousands of rusting fuel drums, the still partly bitumenised bomber bays, the occasional pile of ammunition or bombs hidden in the undergrowth and the remains of the crashed planes, some relatively intact, some no more than heaps of fused metal.
These man made relics are fast disappearing, but the major interest of the area, one hopes, will prove more enduring. This is the rainforest. Quite a large proportion (probably about

continued p. 108

Pteroceras spathulatus (R.S. Rog.) Garay In South Queensland cont.



KEY TO DRAWING

a. Plant actual size
b. Flower from front, actual size X3
c. Flower from side, actual size X3

Some Notes On Orchids And Other Plants At Bamaga cont.

half) is rainforest. It is different to other rainforests in North Queensland as it is formed largely on soils derived from sandstone. There are a lot of deciduous trees and generally speaking a rather open understory, but the forests are luxuriant and the variety of palms are a feature of the area.

Orchids are by no means abundant in the rainforests and the only species observed were - Dendrobium bifalce (quite common), D. smillieae, D. discolor, D. rigidum, D. stuartii, Pholidota pallida, Bulbophyllum baileyi, Pomatocalpa macphersonii, Chilochista phyllorhiza, Luisia teretifolia, Malaxis latifolia and an as yet unidentified species of Malaxis. This dwarf species had pseudobulbs about 2 - 3 cm long and was found by good fortune growing among the leaf litter on the rainforest margins. The small size of this plant when dormant during the dry season has probably prevented its discovery previously. On this occasion in December it had rained quite heavily a couple of weeks before and the plants were starting to produce new shoots making them more obvious than they normally are.

The other vegetation types produced several other orchids. The most spectatular of these would be the orchids of the beach scrubs. Here Dendrobium bigibbum var. bigibbum, D. discolor, D. rigidum and Luisia teretifolia are present in large quantities, at least in the more remote spots. Also present are occasional large plants of D. superbiens. D. bigibbum is also plentiful in vine scrubs on rock hills near the drier west coast.

D. johannis and D. canaliculatum occur in Melaleuca forests but are not as common as elsewhere on the Peninsula. No flowers were seen so I cannot comment on the colour forms present of these orchids.

Perhaps the most unusual orchid sight was seen in the low open forests of Tristania longivalvis growing on the west and north west coasts. These were literally covered in large plants of Diplocaulobium glabrum. In many cases over 60% of the trunk on individual trees was covered while every tree had its share of plants. Very big plants of Luisia teretifolia were also common. Also present in these areas were D. johannis and D. rigidum.

In the same area some closed scrubs made up entirely of a species of Leucopogon were seen. These often contained a large number of epiphytes growing low down as there was no ground layer to support a fire. Orchids seen here included D. rigidum, D. smillieae, D. discolor, Bulbophyllum baileyi, Schoenorchis densiflora, Luisia teretifolia, Eria fitzalani and Diplocaulobium glabrum.

While it was just a little early in the year for terrestrial species, two colonies of the attractive Habenaria ochroleuca were seen. One was on a grassy area near the beach on the east coast, the other was near a swamp near Bamaga. This swamp was a very prolific habitat for the pitcher plant (Nepenthes mirabilis) which traps and digests insects in its jug-like modified leaves.

Other points of interest seen on the trip included a fresh water lake a couple of miles from the ocean which was alive with the dangerous salt water crocodile. Quite a trap for the unwary as the lake looked most inviting in the steamy hot weather. A little more pleasant was the long-tailed kingfisher, a migratory bird which arrives from New Guinea in about November and stays on to about April to raise its young. It is a most spectacular bird with a blue back, orange breast and long white tail feathers.

This area must be one of the most scenic of the State.

Here we have the east coast and west coast only a few miles apart - both are very beautiful coastlines which perhaps reach a peak at Cape York and Albany Passage. Away from the coast the scenery is dominated by the rainforests of the central part and by the lakes and heaths of the east coast.

Orchid-wise the area held less of interest than would be expected but this was more than compensated by the beauty of this most northern part of the continent.

P. Lavarack

POSITIVE IDENTIFICATION OF Pteroceras spathulatus (R.S. Rog.) Garay

Peter Vaughan

This is one orchid flower that can be easily identified by the novice. All that required is to take hold of the front part of the labellum and pull forward until it separates down its length, displaying its hollow interior. The hollow labellum is a feature readily seen in Dockrill's drawings, this feature is only shared with P. hirticalcar but the latter is only found in the far north of Cape York Peninsula and is of yellow and brown colouration. The hollow spur is usually transfered to its hybrids also.

EXTENSION OF THE RANGE OF Malaxis marsupichila Upton

Peter Lavarack reports in "The Native Orchid Bulletin" of the Native Orchid Society of Qld. that the undescribed Malaxis mentioned on p. 108 of this issue of The Orchadian has flowered and been identified as Malaxis marsupichila Upton.

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Dedicated to the Study and Conservation of Australasian Indigenous Orchids

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THE ORCHADIAN

Bound copies of The Orchadian are no longer available from the Society. Escalating costs and extensive delays in binding have forced this decision upon us. We suggest you arrange binding of several volumes together.

MEMBERSHIP RENEWAL

Members are reminded that annual subscriptions fall due on the 1st July, 1977. Get that cheque off to our Hon. Treasurer today! Why not make it out for 3 years whilst you are about it ?
Several of our members have yet to pay their 1976 dues and have therefore been removed from the mailing list. Ensure that you do not suffer the same fate; act now!

THE ORCHADIAN - 15th YEAR OF PUBLICATION - 56 ISSUES
730 PAGES OF INTEREST

SARCOCHILUS CHRYSANTHUS SCHLTR.- A SPECIES FROM THE MID MONTANE FOREST OF NEW GUINEA

N.H.S. Howcroft

The New Guinea mid montane forests occur from about 2,000 - 3,000 metres above sea level. The main tree species found in this forest type belong to the genera *Nothofagus* (Beech), *Lithocarpus* (Oak), *Phyllocladus* (Celery top), *Agathis* (Kauri), *Papuacedrus* (Pine), Podocarpus (Brown Pine), Elmerrillia (Wau Beech).

These trees form with other less important timber trees, ideal habitats for the large number of orchid genera and species that thrive both in the tree tops and in the peat and litter on the forest floor.

The forests of this type usually receive a high rainfall and are sometimes subjected to short "dry" spells during which the evening and morning mists sustain the moisture within the forest.

In the Bulolo and Wau regions of the Morobe Province, sections of montane forests are being harvested for their valuable timber. These operations provide opportunities for orchid collecting from felled trees. During one such collecting trip to a logging area in the Watut ranges near Bulolo, several flowering specimens of a species of *Sarcochilus* were collected from felled understory, at 2,000 metres a.s.l.

This orchid keyed out to *Sarcochilus chrysanthus* Schltr. (Fig. 1). The genus is represented by about 6 other species, and possibly more, in New Guinea.

Schlechter divides the genus up into three sections *Monanthochilus*, *Eu-Sarcochilus* and *Asochilus*. He describes them as follows:

Section 1 *Monanthochilus*: Mostly short stems but sometimes a little bit longer, single flowered, (so far) inflorescences permanently positioned and which are sometimes crowded in twos and threes.

Section 2 *Eu-Sarcochilus*: This section contains the main body of the specimens with many flowered clusters, mostly attractive blossoms, labellum is 3 lobed or through suppression of the mid -lobe, two lobed, and as usual shows calluses or other thickened parts.

Section 3 *Ascochilus*: Ridley treated this as a genus, it contains small specimes with small blossoms in which the labellums' middle lobes are divided into three which makes the labellum 5 lobed. For us in New Guinea, as far as known so far, only the first two sections come into consideration, it is by no means impossible that later *Ascochilus* will be found, all the more, as this section is commonly found on the Island of Celebes which strongly resembles New Guinea in its flora.

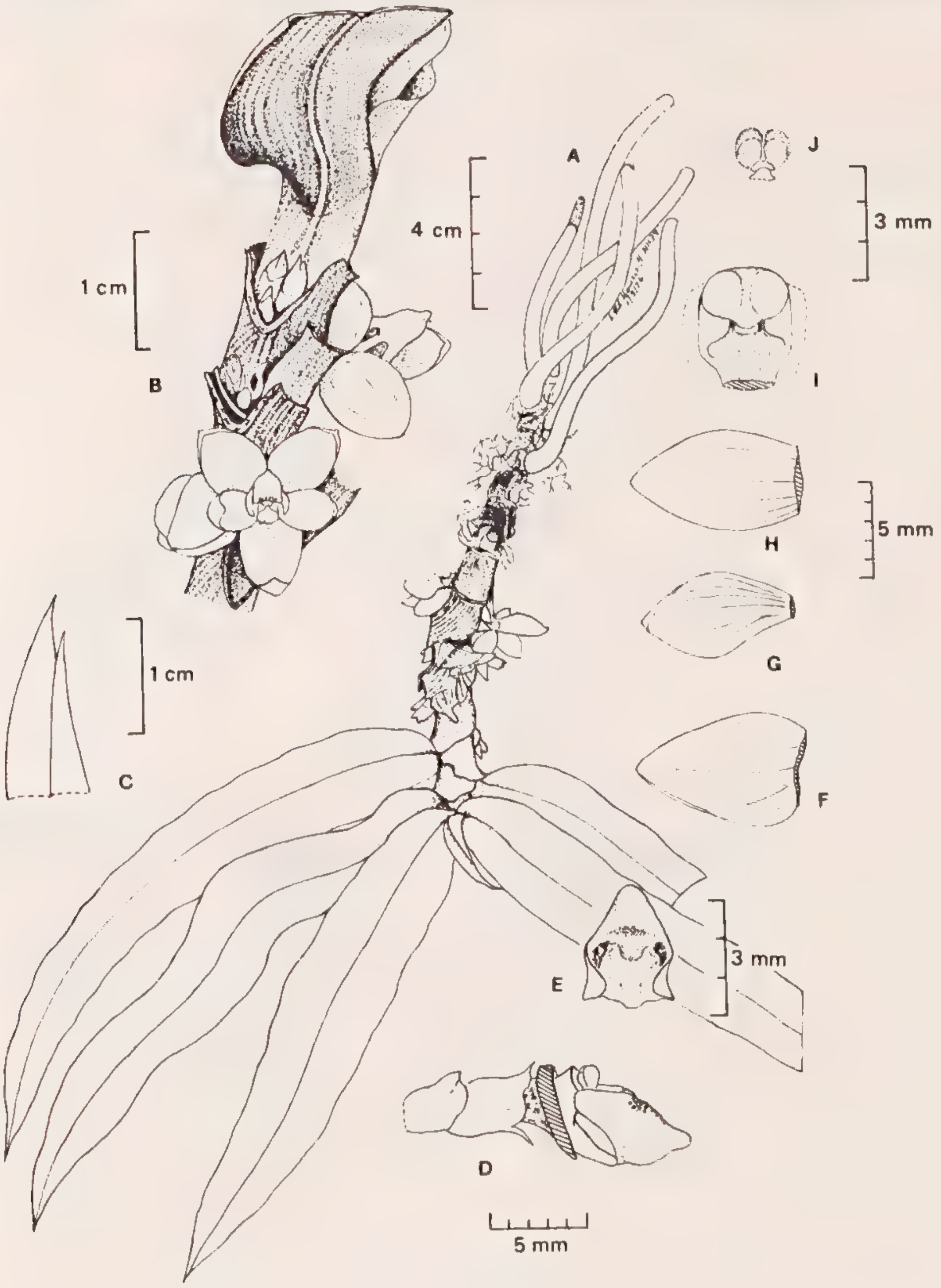
The position of *S. singularis* J.J. Sm. from Dutch New Guinea is uncertain and probably does not belong to these sections.

Sarcochilus chrysanthus belongs to section 1 *Monanthochilus*. Other species in this section are *S. odoratus* Schltr., *S. uniflorus* Schltr. and *S. iboensis* Schltr.

Description: The general characteristics of the species are -
The *plant* is epiphytic; pendant in habit; the roots are long; smooth, fleshy ± 5 mm thick; stems are up to 85 cm long, ± 1 cm thick; *leaf* bracts are often persistent (Figs. 1, A,B); leaves on specimens are 16 - 20 cm long, 2.5 - 3 cm wide; the thin leaves slightly overlap giving the foliage a dense appearance (Fig. 1A), and are falcate and ligulate with a prominent midrib on the abaxial surface (Fig. 1B), the apex is sharp and unequally bidentate (Fig. 1C), the colour of the leaves is mostly dark red; the *inflorescences* are short and set in clusters inthe axils of the leaves and old bracts (Fig. 1B), each produce a single flower, which because of their position appear to be sessile (Figs. 1A, B), the *ovary* of the flower is short, covered with black hairs, and partly encased in short acuminate bracts (Fig. 1D); the *flowers* are smooth, fleshy and bright yellow; the *dorsal sepal* is broadly elliptic, obtuse, 9 x 3.4 mm)Fig. 1H); *lateral sepals* broadly elliptic, obtuse with slightly unequal sides, 9.25 x 6 mm (Fig. 1F); *petals* broadly elliptic obtuse, 8 x 4.5 mm (Fig. 1G); the *labellum* is roughly pouch shaped, articulate, 6 mm long, 2.5 mm wide with a blunt conical spur forming the tip of the labellum (Fig. 1D), lateral lobes oblique and oblong, obtuse, 3 mm long (Fig. 1D), a square shaped callus is formed in the labellum on the anterior part of the spur (Fig. 1E) and is covered with fine hairs; the colour of the lip is yellow with raised orange spots on the external face above the spur (Fig. 1D), and the interior of the lip has orange markings at the base of the lateral lobes (Fig. 1E; the *column* is short, smooth, yellow; anther cap two celled, ovate, 2 x 1.5 mm (Fig. 1 I); pollinia 4 in two appressed pairs, single pollen ± 1.5 x 1.5 mm.

Flowering Season: January to March; Schlechter records it for December; the flowers last for several days.

Sarcochilus chrysanthus Schltr. - A Species From The Mid Montane Forest Of New Guinea cont.



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Sarcochilus chrysanthus Schltr

Distribution: Wide spread in the Bulolo - Wau regions and reported for the Goroka and Mt. Hagen regions, it probably has a wide distribution throughout New Guinea. It appears to grow at altitudes between 1,800 and 2,200 metres a.s.l.

References: Schlechter, R. (1911-14) Orchidaceen von Deutsch Neu-Guinea: Text, pp. 966-967.
Schlechter, R. (1911-14) Atlas Zu den Orchidaceen von Deutsch Neu-Guinea: Tafel 341, Nr. 1315.

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Acknowledgement: I thank Mr M. Galore and Mr E. Henty of the Lae Herbarium for the reproduction of my illustration of Sarcochilus chrysanthus Schltr. and Mr Neumann of CNGT Bulolo for the translation of Schlechter's German script.

Note: The illustration (NH39, Lae 1522) produced for this paper has been lodged with the Lae Herbarium for reference purposes and cannot be used without permission of the author.

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THE PROBLEM OF NAMING ORCHIDS - A NEW NAME FOR DENDROBIUM OPHIOGLOSSUM Rchb.f.

J. Dodd

On the following pages there are some drawings and a description of a common orchid that is found throughout much of lowland Papua New Guinea, which was introduced to me as *Dendrobium ophioglossum* Rchb.f. I now feel that this is not the correct name for the orchid, and below I shall try to explain why, and also give what I think is its proper name.

By all accounts and from my personal experience, it is a widespread species, and one would therefore expect to find that either Schlechter or Smith had come across the plant at some time when they were working on the orchids of this Island. However, neither of them mentions a species called *D. ophioglossum*. A careful search through the drawings and descriptions produced by these men reveals that they had both in fact found the species in New Guinea and had identified it as *D. capituliflorum* Rolfe, although Smith at first described specimens of its as two new species, *D. constrictum*, and *D. confusum* (Nova Guinea, Vol. 8, pp. 79 & 568). Rolfe described the species in 1901, in the Kew Bulletin. A modern example of the use of the name *D. capituliflorum* can be found in van Bodegom's excellent book on the orchids of West New Guinea, on pages 66 and 67. It would appear therefore that this particular orchid has been known from New Guinea for some time under the name *D. capituliflorum*. However, a recent review of some species of Asiatic orchids by P.F. Hunt (Kew Bulletin, Vol. 26, no. 1, 1971; reprinted in Orchid Review, August 1972) reduces this name to a synonym *D. purpureum* Roxb., so it seems that we should be referring to our 'old' *D. ophioglossum* NOT as *D. capituliflorum*, BUT as *D. purpureum*.

There is one final point. In his fine book on Australian orchids, Dockrill describes *D. ophioglossum* under that name, and actually uses a drawing of a portion of a plant of it from New Guinea to illustrate it. In his view, there must be no difference between the species as found in Australia and the species we have here. Roxburgh described *D. purpureum* in 1832; the younger Reichenbach described *D. ophioglossum* in 1876: if we agree that the New Guinea species should be called *D. purpureum*, then the name *D. ophioglossum* should be reduced to a synonym of this older name.

References:
Dockrill, A.W. *Australian Indigenous Orchids*, pp. 488-9.
Hunt, P.F. *Orchid Review*, August 1972, p.158. (reprinted from *Kew Bulletin*, Vol. 26, no.1, 1971).
Millar, A.N. *O.S.P.N.G. Newsletter*, August 1975.
Schlechter, R. *Die Orchidaceen von Deutsch-Neu-Guinea*, p. 506.
Smith , J.J. *Nova Guinea*, Vol. 8, pp. 79 & 568.
van Bodegom, J. *Enige Orchideen van West Nieuw Guinea*, pp. 66 & 67.

Taxonomy: See above. Previously known as *D. ophioglossum* and *D. capituliflorum*. It is a member of the section *Pedilonum* of the genus *Dendrobium*.

Plant: Plants consist of clumps of short stems, from 8 - 30 cm long, often very thick, up to 3 cm in diameter. Leaves and stems are often purple pigmented, although forms are known which are completely green, or pigmented only on the lower surface of the leaves. Four or five leaves are found at the tips of the younger stems; roots are thin and smooth.

Flowers: Individual flowers are tubular, just under 2 cm long, white with green on the lip and on the tips of the lateral sepals. The anther cap is green. The mentum is about half the length of the flower and is filled with thick nectar. Flowers are borne in dense inflorescences that arise at the nodes of the older leafless pseudobulbs. Flower heads resemble a miniature *D. smillieae* inflorescence, and can be distinguished from the similar *D. bracteosum* by the absence of large conspicuous floral bracts. There is no perfume, but the flowers are long lasting.

Habitat: It is widespread throughout Papua New Guinea up to elevations of around 1,500 m. It grows as an epiphyte, and as a lithophyte, especially in the Sogeri area. When growing lithophytically it occurs in full sun, in which case the plants are usually dwarfed, with thick stems and often heavy pigmentation. As an epiphyte, it is found in fairly dense, shady forests. I have seen it at Kuriva near Port Moresby, in the forests around the Musgrave River, in lowland forest near Wewak and in the Castanopsis forests above Bulolo where it was found with the stems hanging stiffly downwards. I have also seen plants from Cape Rodney, in the Central Province, and from the forests beside the Karawari River in the East Sepik Province.

Cultivation: It is an adaptable species that grows equally well in pots, baskets and on slabs of fibre, in exposed, sunny situations. Flowering is sporadic throughout the year, but seems to be most abundant from December to Febrauary.

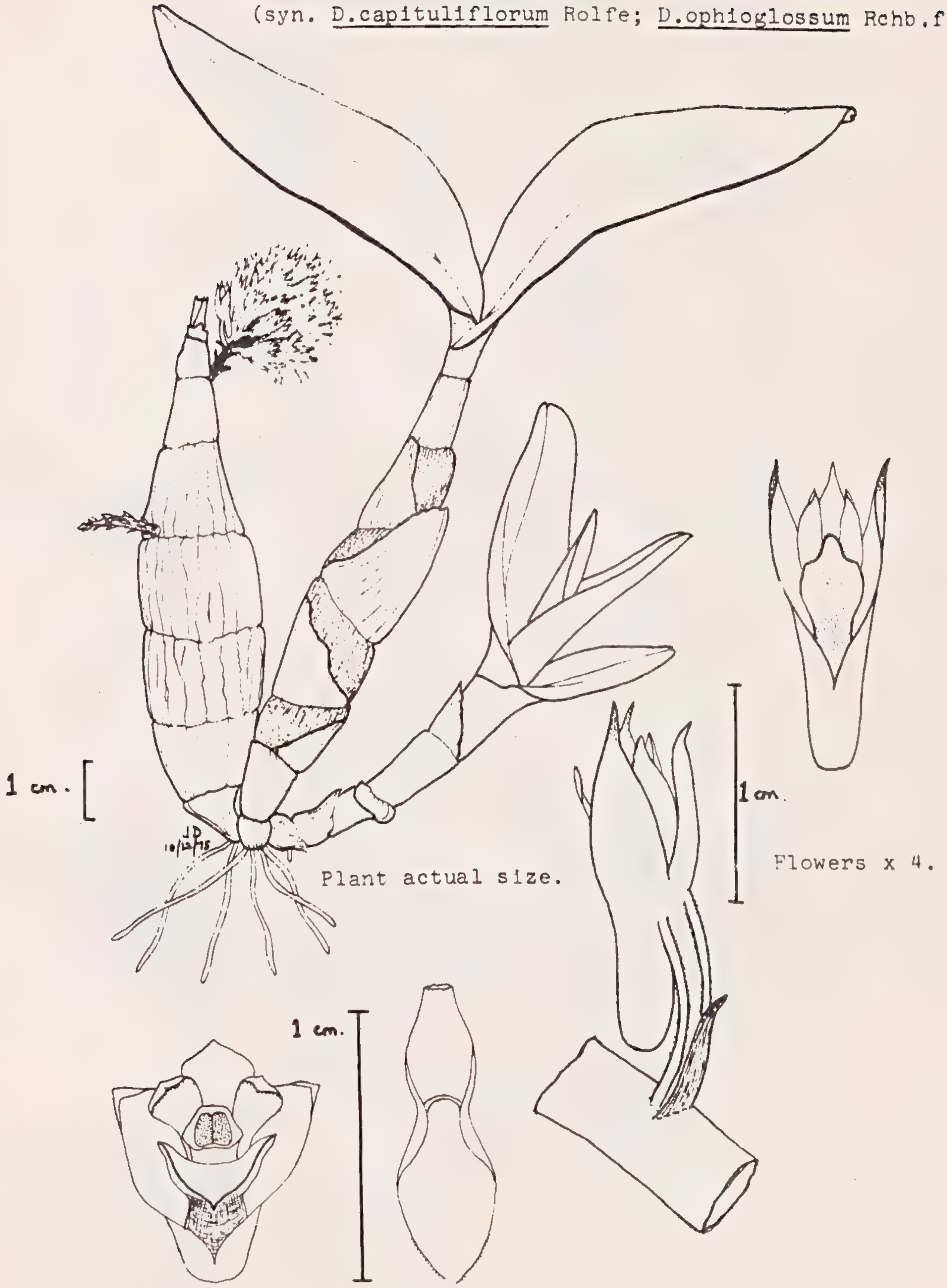
Distribution:
This species is found from Northern Queensland, to Fiji, New Hebrides, Solomons, New Guinea, Moluccas and Java.

Extracted from the Orchid Society of Papua New Guinea "Newsletter", September 1976, by kind permission of the author Mr Jonathan Dodd.

Section PEDILONUM

Dendrobium purpureum Roxb.

(syn. D.capituliflorum Rolfe; D.ophioglossum Rchb.f.)



Plant actual size.

Flowers x 4.

Flower front view & lip x 5.

STINGING TREES - SOMETHING TO WATCH (But Not Too Closely)

Peter Vaughan

This article is aimed at the novice or expert orchid grower who does not make it into the rainforest as much as he would like and thus has not made the acquaintance of our stinging trees.

Stinging trees can be recognised by the leaf which is similar to a mulberry leaf, but may be smaller or larger, depending on the species. The underside of the leaves contain the stinging hairs and glands of formic acid - the same stinging solution that ants use.

The stinging tree is said to be a sign of good soil and good farm land but it is a rainforest tree and the soil under a rainforest is virtually always rich due to the large humus deposits.

Stinging trees belong to the family Urticaceae (Urticaria is the medical term for a skin itch); three genera of stinging plants are found in this family, but only two occur in Australia.

Urtica - This genus extends all over the world and contains about 50 species. U. incisa - better known as the stinging nettle, occurs in Qld., N.S.W., Vic., Tas. and S.A. Most bushwalkers can tell you the young shoots will boil up to a vegetable that tastes like spinach (few have tried it though!). The sting of these, though annoying, is no great worry.

Dendrocnide - This is an Asian - Australian genus of 36 species, of which three are found in N.S.W. The sting varies between species but are severe in comparison to the stinging nettle.

D. excelsa - This tree can grow over 100' in height and I have seen specimens covered with Sarcochilus falcatus. The leaf is over 30 cm (12") long, heart shaped and pubescent, or hairy underneath. Amongst the mostly harmless hairs can be seen the larger stinging hairs. Branchlets and fruit can also have this hair covering. The bark is loose, almost papery, but the inside and root bark is quite fibrous, the aborigines used it to make fishing nets.

D. photinophylla is the small leaf stinging tree and its sting is not as severe. Cribb, in his book "Wild Food in Australia" says the fruit of this tree is edible (though how do you get to it) but rub the fruit with cloth first to ensure there are no stinging hairs.

D. moroides is a shrub and has very hairy leaves and although I have not experienced this stinger, it has numerous hairs and would also be a bad one.

I have been told by various people that the sap of the native cunjevoi (Alocasia macrorrhizos) relieves the pain, but after stings of the former two species I cannot confirm this. Once stung it is not advisable to wash the area as sudden temperature changes can restart the pain up to a month later. The only cure I know and certainly don't recommend it except in the most severe cases, is to dilute (and I don't know how dilute) hydrochloric acid poured over the corresponding site on the opposite limb and the patient counts until it hurts. The area is washed well with water and acid is poured over the affected area for the same count. This is washed thoroughly as soon as the prior count is reached. On washing the pain should have relieved. The danger of this cure is not testing the acid on the normal limb and thus pouring it on the sting where it won't hurt until severe damage has been done. Also, different parts of the body will take longer than others, i.e. the inside forearm will be affected before the hand.

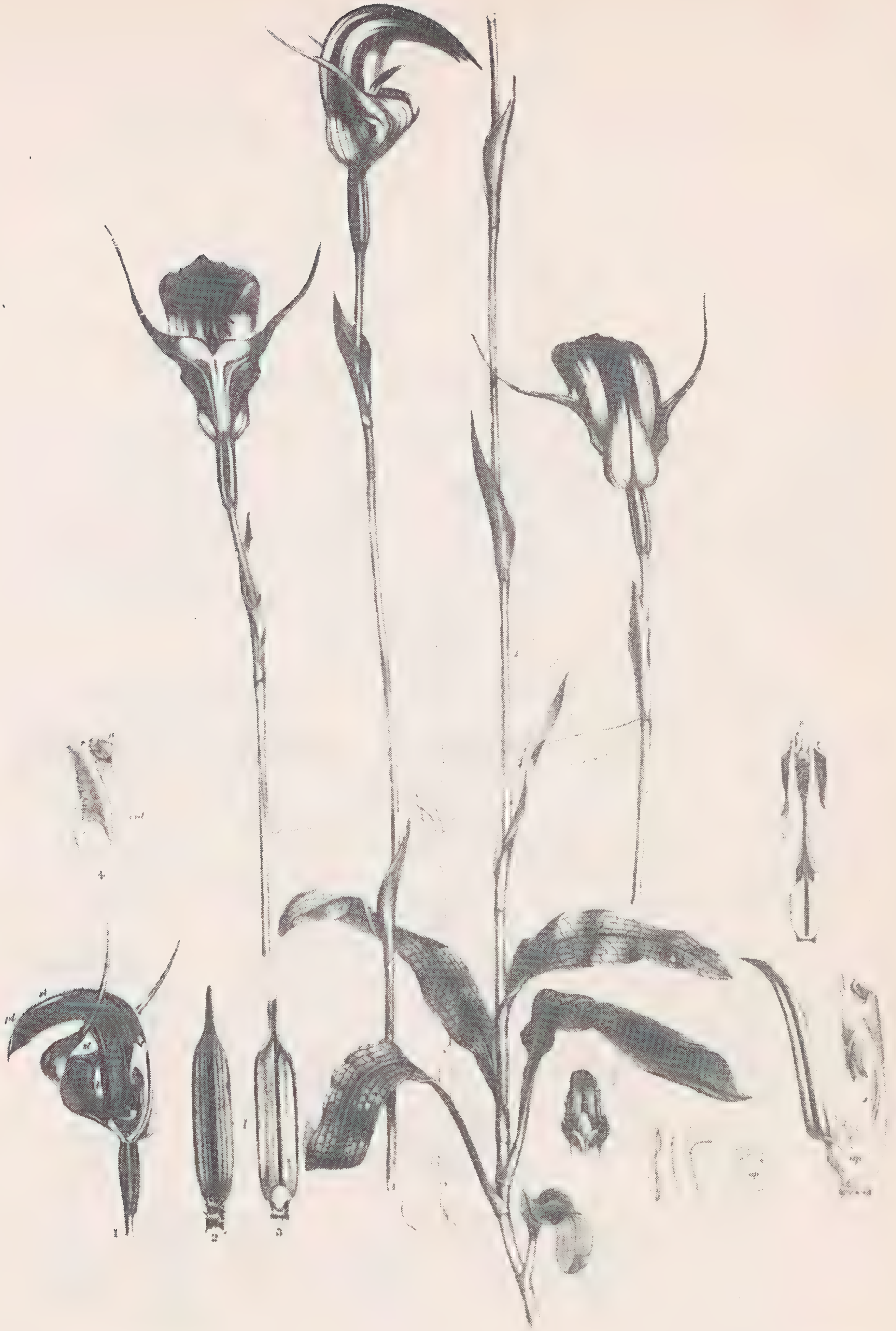
Finally for those still keen enough to go in the forest I will tell you where to find these vegetable fiends. Wherever there has been clearing and the sun reaches a forest floor, a stinger will always be found, i.e. along roads, around picnic areas and throughout timber clearing areas. Also just to keep us on our guard there are always large specimens around where you least expect them.

Peter Vaughan

1977 PITTWATER FESTIVAL A.N.O.S. 3rd. ANNUAL SPRING FESTIVAL

The Spring show will be held in the Mona Vale Hall, Mona Vale Park, Pittwater Road, on 9th - 11th September 1977. Benching from 9.0 am to 10.0 pm Friday. The show will be open from 9.0 am to 9.0 pm Saturday and from 10.0 am to 4.0 pm Sunday. The Prize Presentation will be at 4.0 pm on Sunday the 11th September. Join in exhibiting at this colourful Spring Show or simply bring friends along to enjoy the display. Show schedules can be obtained from the hard working Show Marshall Norm Hilliger, on 99 2468.

Added attractions include plants to be won in raffles and the possibility of obtaining pieces of some of those orchids you have long desired for your own collection!



From Nature by R.D.Fitzgerald, F.L.S.

[illegible]

PTEROSTYLIS Baptistii

Pterostylis Baptistii. (*Fitzgerald.*)

It is surprising that so fine and remarkable a species, and to be found close to Sydney, should hitherto have escaped notice; but I cannot reconcile any description in the "Flora" or elsewhere with this giant form. The late Mr. John Baptist was the first, so far as I am aware, to bestow any practical attention on it. That gentleman having a few years since noticed this species growing in a "tea-tree" swamp, removed a plant to his nursery gardens, where it has since been grown. Specimens were kindly sent to me from "Baptist Gardens," and my attention thereby directed to the locality (Hen and Chickens Bay) where it was first obtained, and close to which I have since had the satisfaction of observing it *in situ*. For the above reason, and in consideration of the assistance rendered by Mr. Baptist to horticulture when in its infancy in this Colony, I have given to this species of Pterostylis (the most likely to attract the attention of florists) the specific name of Baptistii. Month of flowering—October.

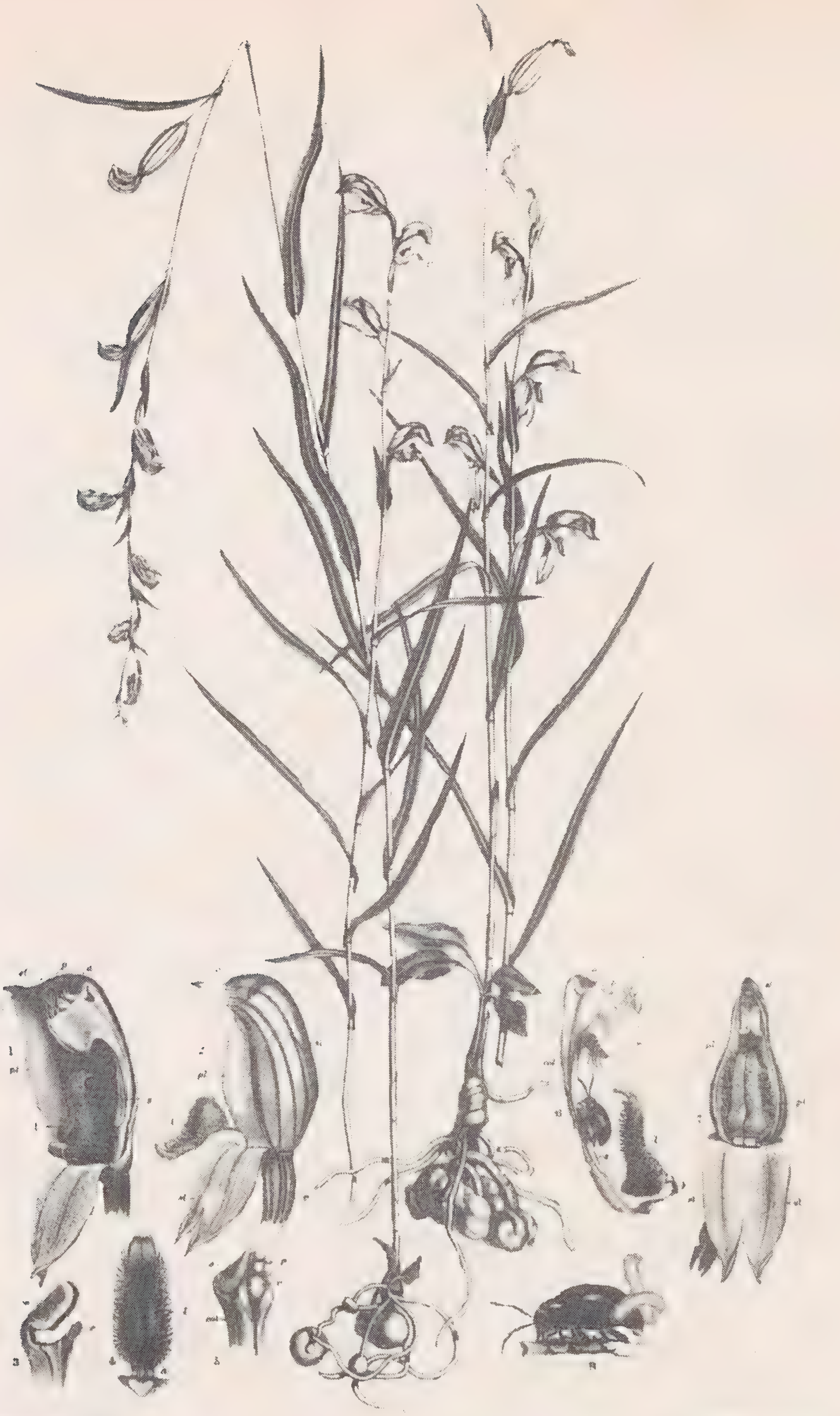
Description.

Leaves elliptical to lanceolate, from two to four inches long, shining as though varnished, and reticulate above, smooth beneath, on long petioles, radical and rosulate, or in proportion to luxuriance carried upwards and passing gradually into bracts. Scapes one-flowered, from one foot or even less to more than two feet, with three or four sheathing, acuminate bracts. Galea inflated at the base on either side of the central line, erect, but curving from about the centre, acuminate, about three and a half inches (measured from the point to the ovary). Lower lip cuneate, with two broadly cupular lobes extending into lanceolate and then subulate points embracing the galea and longer than it. Labellum linear, compressed for about one-fifth its length into a point (but not twisted as in *P. curta*), curved forward from where the compression commences, with a raised ridge along the centre on the front, and corresponding depression at the back. Basal appendage not very broadly penicillate, in two tiers. Stigma cupular at the base, passing upwards into a long point between the wings of the column. Lower extension of wings long, falcate. Pollen masses hooked.

EXPLANATION OF PLATE.

No. 1. Side of flower, half of galea removed (not magnified). 2. Front view of labellum. 3. Back of labellum. 4. Top of column, one wing removed, side view. 5. Column from below stigma, front view. 6. Top of column, wings removed. 7. Pollen masses. 8. Penicillate appendage of labellum. 9. Column and labellum, side view. 10. Plant when not luxuriant, prior to flowering.

The central figures give together the total height of scape.



From Nature by R D Fitzgerald F.L.S.

On Stone by Arthur J. Stopps

PTEROSTYLIS Longifolia.

Pterostylis longifolia. (*R. Brown.*)

The lower sepals, united for the greater part, depend in front of the flower like a pair of pointed bands. The upper sepal forms a hood, enclosing the column, the opening to reach which is still further narrowed by the side petals, which partly cohere to the hood. The labellum, formed like the last for a lady's boot, with the toe slightly turned up, and the whole covered with hairs, especially along the "welt," is attached from the heel by a short band in front of the column. This band permits the labellum to hang down on the lower sepals. The column is slightly arched forward, and the united stigmas form a furrow with raised edges along the greater part of its length. The sides of the rostellum are produced on either side into wings (probably abortive anthers), which meet in front with interlacing hairs, leaving but a narrow opening at the top over the anther. The rostellum rises slightly between them into a viscid boss, and supports four long pollinia, which rest loosely in the open cells of the anther. The anther hangs forward lightly over the pollen masses, and is readily moved backwards on a hinge, so as to admit of their easy removal. In this and all other species of Pterostylis the wings are placed very much as the sods are in front of a gin set for stone-chats, and would form a barrier against an insect reaching the rostellum other than by passing through and under them. The labellum, as stated, falls down on the lower sepals, but on the slightest touch springs up (into the position shown in figs. 1, 6, 7), and continues to close the flower from half an hour to an hour and a half, according to the state of the plant and the weather. It then drops down again, taking from one minute to five to descend spasmodically, when, after about one minute, it quickly regains its sensitiveness. The form and position of the wings and action of the labellum, closing the flower, led me to the conclusion that fertilization must be performed by very small insects, shut in by the labellum and effecting their escape through the wings, thereby being brought into contact with the viscid matter on the rostellum, transferring it to the pollen masses, and thus removing them from the anther, which would yield on the hinge at the back and permit egress. I therefore procured a few of the small beetles that *afflict* the Hibiscus, and carefully dropping one of them on the labellum, it was instantly carried into the flower, where its efforts to escape were anxiously watched for a quarter of an hour, when it managed to effect that escape by creeping through the wings and past the rostellum (fig. 6), forcing the anther partly back. It was immediately seized, and two of the pollen masses were found attached to its side (fig. 8). This insect was then dropped on the labellum of a *Pterostylis obtusa*, from which the pollinia had been removed, and a full capsule of hybrid seed was thus obtained. On repeating this experiment the result was not always the same, as in some cases the beetle, after advancing up the column (fig. 6) sufficiently to remove one or more pollen masses, drew back, and retiring over the stigma fertilized the flower, and at length escaped with some of the pollen attached to it; and again, in some cases the beetles were apathetic, and remained inactive till the labellum had fallen, when they escaped without affecting the condition of the plant. This result is however far less likely to occur when an insect visits a flower of its own freewill and is suddenly entrapped, than when it has been handled and kept in confinement before being dropped on the labellum. Notwithstanding this complex arrangement for the fertilization of this species very few flowers comparatively are fertilized, and the visits of insects, unless they occur at night, seem to be few and far between; for though it is not an uncommon Orchid, and is to be found in groups, the labellum is seldom noticed closing the flower, which would often be the case were it frequently touched, as it remains so long a time before recovering the dependent position. Should insects touch the labellum and not be carried into the flower, or should wind shake the plant, the instant exclusion of all insects, by the springing up of the labellum and its continuance for so long a time in debarring entrance, must apparently be at least as great a disadvantage as any advantage its sensitiveness can possibly be.

Under all the circumstances very few pollinia are found in a state of nature to be removed from the anthers, and when the plants are kept under a bell-glass no seed is ever produced. When the pollen of this species itself or that of any other Pterostylis is placed on the stigma, full capsules of apparently good seed are almost invariably obtained. The labellum continues to be sensitive till the flower begins to wither, whether it has been fertilized or not, and plants subjected to strong fumes of chloroform lose little or none of their sensitiveness. The time of flowering of this species is from June to September.

EXPLANATION OF PLATE.

No. 1. Side view of flower, half of the galea removed, labellum in position assumed on being touched. 2. Side view of flower, labellum in ordinary position. 3. Side view of top of column, pollen and wings removed. 4. Front view of labellum. 5. Front view of top of column, wings removed. 6. Side of column, showing position of labellum on being touched by an insect, and a beetle crawling over the stigma. 7. Front view of flower closed by labellum. 8. Beetle on having escaped from the flower through the wings and removed two of the pollen masses from the anther.

SOME BANNABY ORCHIDS

Garry Wells

Bannaby is an agricultural area east of Taralga in the Southern Highlands of N.S.W. containing scattered areas of non-profitable stringybark forest. Snow is a possibility in Winter and combined with a fairly low rainfall of 25 inches per annum I considered it just the sort of environment of which any orchid in full possession of its faculties, would politely but firmly refuse occupation. However, it proved me wrong and continues to do so, unfamiliar species still popping up.

The first orchid seen was Diuris pedunculata, poking up from the dried grass in the middle of one not very heavily grazed paddock. Its discovery was not particularly impressive to me, being somewhat narrow mindedly an epiphyte person at the time. Thus it was some time later that a further two species were discovered - Pterostylis truncata and Microtis unifolia were growing on our access road to a forest area but again in a grazed paddock. Both grew in full sun from 9 a.m. to 5 p.m., shaded only by the grass they grew with. The Pterostylis was growing in a five foot square mass and perhaps, a hundred flowers, all with the distinctively and ridiculously short flowering stem. Both Microtis and Diuris in large numbers have missed out on flowering regularly due to being gnawed off several inches above ground level.

In a cleared area, very stony and therefore sparsely grassed, but adjacent to a forest area I have noticed a Calochilus (eaten before identification), Eriochilus cucullatus, Caladenia carnea & C. caerulea, Diuris pedunculata & D. maculata, Glossodia minor & G. major, a Microtis species and Pterostylis truncata. Full sun from 8 a.m. to 2 p.m. then tree shade. It's good to see orchids finding a niche and growing in an environment disturbed by man's interference with natural vegetation.

In the adjacent forest, conditions vary from exposed and dry, to shady and moist, maidenhairs replace grass. In the latter area, Pterostylis obtusa in widespread but not dense colonies. The occasional Pterostylis curta, P. revoluta, and even the hardy P. truncata appear just out of the ferny areas. Acianthus exsertus is widespread. Above this level, down the side of the ridges, Diuris sulphurea is unmistakably visible because of the size and richness of colour of the flowers. Here Pterostylis revoluta becomes more common. Amongst the sparse grass, I came across a Corybas fimbriatus in a very dry environment for this genus - its flower was not quite out, so I returned later only to spend six hours fruitlessly searching for this apparently uncommon orchid.

On the ridge itself there was no understory, no grass, only rocks and twigs but here grew a lone Microtis species probably M. parviflora, Pterostylis parviflora, P. reflexa, Caladenia major and C. minor, and an unidentified Caladenia.

The opposite side of the ridge, facing south is moist, ferny and in 25% filtered sunshine, I found Acianthus fornicatus, A. exsertus and A. reniformis growing with Chiloglottis reflexa and Pterostylis nutans in small clumps. On an undeveloped hill, also facing south, grows a peculiar kind of shrubby bush to about six feet high that is very brittle and covers the entire area of the steep hill between stringy barks. Here grows Pterostylis coccinea, a dark brown form sparsely distributed in small colonies unlike its habit in an area of the Boyd Plateau where a Sydney terrestrial man Burt Bushell showed it to me growing by the acre with thousands of flowers from green to brown. Also in the area is more Chiloglottis reflexa of which on the occasion of its discovery, I decided to take some pictures at home. I picked two and deposited them as I usually do between my front teeth, my hands being busy. After ten minutes an insect made a nuisance of itself fluttering around my face, soon to be joined by another and another. One settled and was duly swatted - it turned out to be a wasp and I took off fearing a large scale attack, the memory of a recent, rather one sided, communication with a paper wasp fresh in my mind. Later I realised their interest perhaps wasn't aggression but another basic drive, that they were responding to whatever release mechanism the orchids resembling in some way female wasps, iniated, thus facilitating fertilisation of the flower.

On another cleared area, raised above and adjacent to a stream, a small clump of Pterostylis laxa ekes out a rather shaky existance beneath some river gums. Nearby Pterostylis truncata, Microtis species, Eriochilus and Diuris sulphurea grow amongst the coarse gum tree litter. Along this stream, the water falls suddenly into a small pool. The rocks on the south side are plentifully covered with Dendrobium linguiforme - a surprise in this often very dry and cold area. Dipodium punctatum is an infrequent sighting though does occur on steep, dry hillside amongst the stringybarks. Often so inhospitable is the environment the only plants beneath the stringybarks are the orchids. Recently in this environment I have seen the growth forms of an unidentified Prasophyllum, another Caladenia and several Thelymitra / Calochilus. There are still more to be identified and no doubt some I have missed altogether. More than the great pleasure of finding and photographing orchids in the bush is the enjoyment of walking to a bit of isolated, quiet bush, dawdling up a hill, down a ridge, with no specific purpose, no time limitations until tiredness or darkness comes upon me. It is a relaxation that would be of benefit to everybody who lives in the city.

Garry Wells, 34 Bunyula Street, Bellevue Hill, N.S.W. 2023.

"GIRRAWEEN" - PLACE OF THE WILDFLOWERS

Mervyn Fletcher

High in the granite ranges which in reality form an interstate extension of the New England Tablelands, lies the Stanthorpe district and the "Granite Belt" of Queensland.
For about 60 km on the Queensland side of the state boundary the topography of the country is typical of the New England district - with crisp winter frosts and occasional snow falls. The summer climate being variable, dry and tolerable.
The Stanthorpe district in the main has a westerly aspect and forms a watershed of the River Murray system.
Of outstanding interest to the botanist is the "Girraween" National Park at Wyberlea. "Girraween" being an aboriginal term meaning "place of wild flowers".
Quite an interesting observation as native plants and flowers abound throughout the Stanthorpe district and reach their greatest concentration in "Girraween" National Park. Included in the wildflower population are of course, many species of native orchids - over a hundred of them and although terrestrials predominate, many epiphytes occur as well.
The first sightings of native flora in this district by white man were recorded by botanist-explorer, Allan Cunningham during his journey of exploration in June, 1827. He noted Petrophile, Persoonia, Leucopogon, Boronia and other plants growing here.
Of all the wildflowers perhaps the orchids of the district are the most fascinating.
In the following list the species named vary in occurence from very common to very rare.

Acianthus	
A. exsertus	May
A. reniformis	Sep.
Bulbophyllum	
B. crassulifolium	Oct.
B. elisae	Nov.
B. exiguum	Mar.
B. minutissimum	Oct.
Caladenia	
C. alba	Oct.
C. caerulea	Aug.
C. carnea	Sep.
C. carnea var. pygmaea	Oct.
C. dilatata	Oct.
C. filamentosa	Aug.
C. hildae	Oct.
C. iridescens	Sep.
C. reticulata	Sep.
Caleana	
C. major	Nov.
Calochilus	
C. campestris	Oct.
C. gracillimus	Oct.
C. robertsonii	Oct.
Chiloglottis	
C. formicifera	Apr.
C. reflexa	Apr.
C. trapeziformis	Apr.
Corybas	
C. dilatatus	Apr.
C. fimbriatus	Apr.
C. pruinosus	Apr.
C. unguiculatus	Jun.
Cryptostylus	
C. erecta	Dec.
C. leptochila	Nov.
C. subulata	Nov.
Cymbidium	
C. canaliculatum	Nov.
Dendrobium	
D. beckleri	Nov.
D. cucumerinum	Dec.
D. kingianum	Nov.
D. linguiforme	Nov.
D. pugioniforme	Nov.
D. schneiderae	Mar.
D. speciosum	Nov.
D. teretifolium var. fairfaxii forma aureum	Oct.
Dipodium	
D. hamiltonianum	Nov.
D. punctatum	Nov.
Diuris	
D. aurea	Nov.
D. abbreviata	Sep.
D. bracteata	Oct.
D. maculata	Oct.
D. palachila	Oct.
D. punctata	Nov.
D. punctata var. alba	Nov.
D. platichila	Nov.
Eriochilus	
E. cucullatus	Mar.
Galeola	
G. cassythoides	Mar.
Gastrodia	
G. sesamoides	Nov.
Glossidia	
G. major	Nov.
G. minor	Oct.
Lyperanthus	
L. nigricans	Oct.
L. suaveolens	Oct.
Liparis	
L. coelogynoides	Dec.
Microtis	
M. oblonga	Oct.
M. parviflora	Oct.
M. unifolia	Oct.
Orthoceras	
O. strictum	Nov.
Paracaleana	
P. minor	Nov.
Prasophyllum	
P. archeri	Mar.
P. australe	Nov.
P. fimbriatum	Dec.
P. flavum	Oct.
P. gracile	Nov.
P. morrisii	Mar.
P. nigricans	Jan.
P. odoratum	Oct.
P. patens	Oct.
P. plumosum	Feb.
P. rufum	Mar.
P. (unknown)	Mar.
Pterostylis	
P. alveata	May
P. acuminata	Apr.
P. curta	Aug.
P. cycnocephala	Sep.
P. daintreana	May
P. decurva	May
P. falcata	Dec.
P. fischii	May
P. hamata	Sep.
P. hispidula	Mar.
P. longicurva	Mar.
P. longifolia	Jun.
P. mutica	Aug.
P. nutans	Sep.
P. obtusa	Mar.
P. ophioglossa	Apr.
P. parviflora	May
P. pedunculata	Aug.
P. pusilla var. prominens	Oct.
P. reflexa	Mar.
P. revoluta	May
P. rufa	Oct.
P. rufa ssp. aciculiformis	Nov.
P. woollsii	Oct.
Sarcochilus	
S. ceciliae	Dec.
S. falcatus	Oct.
Spiranthes	
S. sinensis	Mar.
Thelymitra	
T. aristata	Oct.
T. carnea	Oct.
T. ixioides	Oct.
T. media	Oct.
T. media var. carneo-lutea	Oct.
T. nuda	Oct.
T. pauciflora	Oct.
T. rubra	Oct.

Mervyn Fletcher, Ballandean,
Qld. 4382.

WINTER CULTURE NOTES

Ted Gregory

Dear Orchadians,

The Autumn in the Manning River area has been a really mixed grill as far as our natives are concerned. March was so wet that we thought the pots could have floated away; then followed the driest April in fifty years for contrast. In March the floodwater peaked about six feet from my bush house and deposited roughly ten million famished snails there, and you can guess which direction they marched in once the water receded. This was followed by a hailstorm with hail the size of bantam eggs, so my poor old plants have been copping it from all directions. The plants seem to have all survived well considering, but new shadecloth was the order of the day.

Winter time is the part of the year that separates the dedicated native grower from the ordinary grower; it's rather easy in the cold weather to forget them in their pots or on their bit of fibre when they appear to be standing still. However, at this time of the year a little bit of time spent can often result in better plants and more flowers once Spring begins to arrive.

No matter what time of the year it is, there are bound to be weeds to attend to, both in the pots and under the benches if one does not have a concrete floor. With weeds in the pots the main thing is to pull them out before they get too much of a toehold, otherwise there is risk of disturbance to the plant, which is not a good thing when the plant is more or less dormant. If weeds under benches are not too much of a problem, they are best removed by hand, which is the safest and cheapest method. If you have patches of troublesome weeds, a few pellets of ERASE (R) can be a big help. But first check you have no pet shrubs handy, as once this is washed in it will knock anything growing handy. If weeds are a major problem, one of the standard hormone sprays may be used, but care must be taken that none of the plants get an accidental dose as the results can be disastrous at times.

The use of a fungicide once a month is always money well spent as far as the overall health of your plants are concerned, any one of the ordinary fungicides will do the job if used as directed. If there is ever sign of plants having a wog that is not being controlled, do not hesitate to send a piece of the plant to your nearest Department of Agriculture office for identification. All these fungi can be controlled, but the right fungicide must be used, otherwise you will be wasting your time and money.

As we approach the Spring and the racemes start to grow an eye must be kept out for aphis. Marvellous where these little devils come from if there's a bit a soft chewing to be had. Also marvellous how quickly they can destroy that young set of buds if they are left alone. A shaker of TOPCLIP (R) dust will keep nearly all "bities" off and will not mark the buds or flowers. This is a Diazanon dust and will not harm plants unless used with terrific excess. Here's to a bumper crop of flowers in the Spring.

Ted Gregory, R.M.B. 201, Taree. N.S.W. 2430

A.N.O.S. ANNUAL GENERAL MEETING AND ELECTION

The Election Returning Officers hereby give notice that:
The closing date for nominations of candidates for election to Council is 21 st July 1977.
The date of election is Thursday 1 st September 1977.
The date of the Annual General Meeting is Saturday 3 rd September 1977, at 10.00 am.
All elected Councillors are offering themselves for re-election to Council.

By special arrangement with the Director of the Royal Botanic Gardens, Sydney, this year's A.G.M. will be held at that establishment. Members should make every endeavour to attend. Enter the gardens from any entrance and make your way to the lawn area immediately behind the Herbarium, on the gardens side. The meeting will be held in the new lecture facility immediatly adjacent. Following the A.G.M. and luncheon, members are invited to tour the glasshouses and view the many treasures therein. Those of you who attended last year will no doubt, look forward to renewing friendships made as we toured the splendidly kept establishment.

IMPORTANT: Our Hon. Secretary would very much appreciate advance advice from members intending to participate. As you may appreciate this information will help your Council and our host for the day Don Blaxell, in determining the exact room to be used.

EDITORIAL

Australian native orchids are something that all of us have as an interest and all of us love to see.

Not all of us manage to see these plants in their natural environment for two reasons, the first is that we do not have the facilities, or time, to go where these orchids grow, or, secondly, the orchids are not growing where we can go.

The orchids once grew in what are now the backyards of many growers, but unfortunately the areas were cleared. This is development and cannot be realistically stopped. But we have areas of natural bushland. Sydney has the Royal National Park and Ku-ring-gai Chase National Park; Brisbane has the splendour of Lamington and Cunningham's Gap National Parks; Melbourne has Kinglake and Wilson's Promontory National Parks and finally, Adelaide has Flinders Chase Flora and Fauna Reserve. Apart from these areas there are other vast areas where orchids grow on either private property or public land.

These orchids are an Australian heritage and they should be preserved for our children and the generations to follow. We, as orchid growers should be the ones that see the species rapidly retreating before collectors and we should realise that this should not be so, if they are to be preserved.

It has recently been brought to the notice of the A.N.O.S. Council that a large number of people of dubious values were turning up at Sydney nurseries, offering a utility or panel van load of Australian native orchids for sale. They claimed to have permits for commercial collection and the plants were collected from the State Forests.

No Councillors have seen these people to certify that the permits exist and there has been no proof as to where the plants were obtained, whether off fallen or standing trees, and whether they came off State Forests or the National Parks.

A.N.O.S. asks members to help preserve our heritage and if they see people destructively taking orchids, especially from an area put aside for their preservation, to notify the local authorities, whether the National Parks and Wildlife Service, its equivalent, or local police. Hopefully these people can be stopped.

Similarly, if anybody is having trouble with collectors on their private land, or feels that collecting permits are being misused, then they could notify the A.N.O.S. Council and we will deliver your complaint to the correct authorities and publicise their reply.

Peter Vaughan, Councillor

NOTICE OF MOTION TO AMEND THE A.N.O.S. CONSTITUTION

The Hon. Secretary of the Society in compliance with item 23 of the A.N.O.S. Constitution & its Amendments, advises that he has received from a Councillor a Notice of Motion to Amend the Society Constitution as follows:

"Item 4 of the A.N.O.S. Constitution be amended to read:
(a) Patron - 1
(b) President - 1
(c) Vice Presidents - 2
(d) Honorary Secretary - 1
(e) Honorary Treasurer - 1
(f) Editor - 1
(g) Immediate Past President - 1
(h) Councillors - 3 (The Council shall have the right, at its discretion, to vary this number in any year)

THE NATIVE ORCHID SOCIETY OF SOUTH AUSTRALIA

It is with considerable pride that we note the formation of the above society on the 22 nd March. Forty eight people attended and there were 44 Foundation Members. Mr Les Nesbitt was elected President with a strong Committee of 7.

The Society meets on the 4th Tuesday each month, except December and January, at the Goodwood Boys' High School. When in Adelaide contact Roy Hargreaves, Hon. Secretary, at 1 Halmon Avenue, Everard Park, 5035. The first issue of the Society's Bulletin augurs well for the future of this new group.

SOME THOUGHTS ON THE VARIETIES OF DENDROBIUM BIGIBBUM

Dave Liddle

Extracted from The Native Orchid Bulletin, the official bulletin of the Native Orchid Society of Queensland. We have frequently extracted material from this excellent bulletin in the belief that the material is worthy of wider reading.

Dr Lavarack's article of Vol. 6 No. 9 has prompted me to some thought on that subject of the status of *Dendrobium bigibbum*.

While agreeing with Alec Dockrill's scheme of things, I feel Blake is probably right in his assertion that the variation in the species is because of environment but surely this can be said of all variations within a species. With this in mind I wonder how the sub-varieties of say *D. tetragonum* or the forms of *D. lichenastrum* would stand. Whichever is the justifiable case, I feel that the variation in *D. bigibbum* is comparatively clear except for the areas where the different forms overlap.

Using Dockrill's scheme, the sub-var bigibbum occurs only rarely south of the Archer River, the overlap with the superbum variety I have found most pronounced in plants of the "Blue Mountains" area. From the Archer River south to about Musgrave Station one tends to find a larger plant both in size of plant and flower. However this is the area in which most commercial collecting is done and the general size of the plants in the area seems to have reduced.

South of the Laura area the plants are less in size flower but in this area lithophytic types become more common. The area generally has a lower rainfall than that further north and consequently one finds most orchids in the scrubby patches around mountain gullies.

The lithophytic forms are stocky plants and have at times been offered as "compactum". These are the plants I feel are most confused with the true "compactum". This plant will elongate if poorly grown whereas "compactum" will most likely produce plantlets or die. I have yet to see a plant collected from a clump of "compactum" elongate so as to be indistinguishable from any other form of bigibbum I have seen.

I have taken measurements of typical plants in many plant colonies south of Laura and by comparing the length with the diameter of the previous year's canes a ratio can be obtained which reduces to the following:

	Length of cane : diameter of cane
Epiphytes	35 : 1 to 27 : 1
Lithophytes	20 : 1 to 16 : 1
Compactum	7 : 1 to 2 : 1

These ratios are intended only as a guide to show the great difference between compactum and similar plants from the same area in size of plant if not flower differences.

FURTHER NOTES ON DENDROBIUM BIGIBBUM

P. Laverack

Extracted from The Native Orchid Bulletin.

There is apparently some confusion about the effect of the environment on variation in orchids and other plants.

According to the theory of evolution almost all the differences now present between living things are a result of the environment (and in the case of orchid flowers the environment includes the pollinator).

Some of the differences such as the tendency to grow lush dark green leaves if in shade are temporary and reversible, but the differences which are important in defining species or varieties are fixed and should be relatively constant.

My guess is that the short, stout bulbs of the true "compactum" are a permanent feature perhaps only recently so in the time scale.

There is evidence that within the last 10,000 years the climate of North Queensland has been much drier and probably *D. bigibbum* was spread quite widely in what is now the Cairns - Mareeba - Mossman area. However, when the climate changed becoming wetter the "compactum" populations on the rocks at Hartley's Creek became isolated from the normal form and thus the genes for short, stout bulbs which are apparently an advantage to plants growing on rocks would have been selected forms.

In the same way the Laura population that Dave Liddle talks about tends to develop a short, stout bulb when growing lithophytically. The difference, however, is that the Laura plants still have some breeding contact with the "normal form", and thus these characteristics are not fixed.

This, of course, is purely conjecture but is one explanation.

The difference between "variety superbum" and "variety bigibbum" is not great in botanical terms. Differences in size and shape of petals are fairly obvious, but not the kind which are of great importance botanically. This is reinforced by the occurrence of a series of intermediate forms stretching from about the Archer to the Olive Rivers showing that the two forms are not clear cut.

Whether the differences are sufficient to separate two varieties or not is really a matter of judgment and clearly Dockrill and Blake have come up with different decisions. In general categories below the species level are of more use to horticulturists than to botanists and therefore, while being personally uncertain which is correct, I suggest growers stick to Dockrill's scheme.

NEW AUSTRALIAN NATIVE ORCHID HYBRID

Joe Betts

The September 1976 registrations listed by the Royal Horticultural Society and published in the November 1976 issue of "The Orchid Review" included the following item of interest:

Name	Parentage	Registered by
Parachilus Riverdene	Sarcochilus hartmannii X Parasarcochilus hirticalcar	V.F & N.C. Jupp

Noel Jupp has kindly provided the following information on the reasons for making the cross and quotes from the R.H.S. Registrar. These quotes were provided after I had pointed out to him the incorrect use of the generic name Parasarcochilus instead of Pteroceras:
Parachilus Riverdene (Sarcochilus hartmannii X Pteroceras hirticalcar). From the moment I saw P. hirticalcar I realised that it had great possibilities as a parent, it had good shape, heavy texture, unusual colour and a habit of continually elongating its flower spike. The cross was duly made and not much seed was obtained. However it grew well and flowered just on nine months out of flask. So far the young plants have flowered twice in six months. The largest plant we have has now been flowering for just on four months and we are intrigued to see how far the spike will continue to elongate. Very little variation has shown up so far. The largest flowers have a spread of approximately 1", the basic colour being a yellowish green heavily overlaid with purplish brown blotches.
5 - 3 - 77 " Re. Parachilus Riverdene. Firstly the Registrar is aware of the transfer of hirticalcar to the genus Pteroceras and the matter is under consideration at this time."
23 - 3 - 77 " The R.H.S. has ruled and I quote: 'Parachilus Riverdene: The above will hold good in registration with parantage as originally accepted (Sarcochilus hartmannii X Parasarcochilus hirticalcar). Pteroceras is not accepted as a separate genus for horticultural (incl. registration) purposes, where it is equated with Sarcochilus which is accepted. Parasarcochilus (incl. the species hirticalcar) is however accepted in registration as a separate genus from Sarcochilus, and so continues notwithstanding the fluctuations in botanical opinion.' "

SOME ASPECTS OF SWAMP OR BOG ORCHIDS IN SOUTH AUSTRALIA - Part 1

R. Bates

Of approximately 120 species of orchids in South Australia nearly 20% would be classed as bog orchids. This would seem unusual when one considers that only .001% of the state is non-saline swampland.
Many orchids found in non-swampy forest in the eastern states are almost confined to boggy areas in South Australia. One reason for this is that no area of the state receives reliable Summer rainfall, consequently any orchid which flowers from late November to April is likely to be in a swampy situation (exceptions being Caladenia, Dipodium and Gastrodia, all confined to small areas of high rainfall).
A bog only one hectare in size and isolated from other swampy areas by several kilometres may contain upward of ten species. The reason for this lies in the activities of swamp birds. A snipe, for example, feeding on frogs and molluscs, collects mud on its feet - mud containing seed and tiny orchid tubers. The same bird may then fly to another swamp several kilometres away - thus there is constant interchange of swamp orchids over large distances.
Orchids found in swampy areas along rivers are often transported great distances by flood. This accounts for the occasional reports of Cymbidium canaliculatum along the Cooper's Ck. and Diamantina River in South Australia's far north. As both these water courses arise in Central Queensland, where the Cymbidium occurs, a tree supporting the orchid may be carried by flood as far as Lake Eyre where one or two dry years will see the end of the plant. Similarly, orchids were carried along the Murray system.
Many swamp orchids in cultivation can be allowed to dry out after flowering and not wetted again for several months, without harming the tubers. It is probable that these orchids do not actually require swampy conditions, they merely have a tolerance of them.
Due to man's increase of irrigated Summer pasture, some orchids are actually increasing in cleared areas, e.g. Spiranthes and Microtis parviflora, once again transported into the area by water fowl.
Several recently discovered orchids in South Australia have been swamp species. Their discovery was due to clearing of land around swamps and eating down of herbage by cattle, thus exposing species once hidden in impenetrable areas, e.g. Corybas fordhamii.
In some areas changes brought about by settlement have allowed new species to move into South Australia. The humid, cool, shaded micro-climate provided by mature forests of Pinus radiata has allowed Chiloglottis cornuta to increase as the sphagnum bogs increase. Other eastern state orchids may appear in time, in the pine forest environment. Below is a list of South Australian 'bog' orchids: Prasophyllum australe, P. hartii, P. archeri, P. despectans and P. beaugleholei; Pterostylis falcata, P. tenuissima and P. parviflora; Microtis parviflora*, M. oblonga, M. atrata, M. orbicularis; Thelymitra mucida*, T. venosa, T. truncata*; Chiloglottis cornuta; Spiranthes sinensis; Cryptostylis subulata; Diuris brevifolia*; Caladenia congesta; Corybas fordhamii.
Those species with asterisks (*) are sometimes found outside the swampy areas, though more often within them. Many other species thrive within swamps, but are more common in dry areas, e.g. Eriochilus, Pterostylis nutans, Thelymitra flexuosa and T. carnea.
The large population of insects of numerous species, which usually occur in swampy areas are an added advantage to orchids as they increase the chances of pollination.
Though many species of orchid flower better after a bushfire, there are others which will not tolerate fires and as many boggy areas remain unburnt during bushfires, these orchids have a better chance of survival in such areas. Contrary to this, many swamp thickets become so dense that the orchids are smothered and the cleaning effects of fires is beneficial. Similarly, animals grazing in these areas open up the thickets and allow orchid increase. It is a fact that partial clearing since settlement has actually increased the population of some species - but not many.

R. Bates, 38 Portmarnock St., Fairview Park, S.A. 5126.

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THE ORCHADIAN

Bound copies of The Orchadian are no longer available from the Society. Escalating costs and extensive delays in binding have forced this decision upon us.

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Members are again reminded that annual subscriptions fell due on the 1st July, 1977. Get your cheque off to our Hon. Treasurer today!

THE ORCHADIAN - 15th YEAR OF PUBLICATION - 57 ISSUES
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MISCELLANEOUS NOTES ON AUSTRALIAN ORCHIDACEAE 2 - REDUCTION OF 6 TERATOLOGICAL FORMS TO SYNONYMY

David L. Jones

Synopsis - In this paper 6 species of Australian Orchidaceae are reduced to synonymy. All are regarded as being teratological (aberrant) forms of other species.

Paracaleana sullivanii (F. Muell.) D.F. Blaxell is reduced to a synonym of *Paracaleana minor* (R.Br.) D.F. Blaxell.

Prasophyllum anomalum Rupp and *P. bowdeniae* Rupp are reduced to synonyms of *Prasophyllum fimbriatum* R.Br.

Pterostylis crypta W.H. Nicholls is reduced to a synonym of *Pterostylis obtusa* R.Br.

Pterostylis celans Rupp is reduced to a synonym of *Pterostylis nana* R.Br.

Thelymitra murdochae W.H. Nicholls is reduced to a synonym of *Thelymitra aristata* Lindl.

Introduction - Teratology in Australian terrestrial orchids is more common than is suggested in orchid literature. Numerous instances have been noted by the author during field studies including some very bizarre developments (eg. Jones 1968).

In my opinion these taxa are only teratological forms and have been reduced to synonymy.

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Paracaleana minor (R.Br.) D.F. Blaxell
Contr. NSW Nat. Herb., 4 : 281 (1972)
Synonyms: *Caleana nublingii* W.H. Nicholls in Vict. Nat. XLVIII (1931) 15.
Paracaleana sullivanii (F. Muell.) D.F. Blaxell in Cont. NSW Nat. Herb. 4 :282 (1972)

Blaxell (1972) reduced *Caleana nublingii* W.H. Nicholls to a synonym of *Paracaleana minor* (R.Br.) D.F. Blaxell while provisionally retaining *P. sullivanii* (F. Muell.) D.F. Blaxell at species level. The reason for the pro tempore retention was given as the need for further observations and collections.

I carried out extensive studies to determine the relationship between *P. minor* and *P. sullivanii* during the 1969-1971 seasons. The area chosen for study was between Mt. Zero at the northern end of the Grampians and Dadswells Bridge. *P. minor* was present in abundance and was interspersed with fair quantities of *P. sullivanii*. A large number of specimens were examined in the field and selected flowers removed for detailed microscopic examination. As a result of these studies I conclude that *P. sullivanii* is a self-perpetuating apomictic development of *P. minor* and have reduced *P. sullivanii* to a synonym of *P. minor*. A similar conclusion was virtually reached by Swaby (1937), but rejected by Nicholls (1937).

The populations of *P. sullivanii* in the Grampians provide a remarkable parallel with those *C. nublingii* in the Blue Mountains and it would be interesting to determine the cause of each development. Taken as a whole the N.S.W. and Victorian populations are comparable and the variations observed in *P. sullivanii* easily overlap those shown in illustrations of *C. nublingii* (Nicholls 1931, 1969).

The flower morphology of *P. sullivanii* is diverse and some of the extreme aberrant forms indicate a very unstable situation. The labellum laminae vary from a tuberculate resemblance of *P. minor* to a flat non glandular relic and labellum tubercles often appear on the column and tepals. Considerable variations also occur in the length of the column foot, and the degree of reduction of the column and anther. The pollination mechanism is completely functionless as the labellum is immobile, or capable of only slight movement, and the stigma and anther are generally reduced or often absent. If pollen is produced it is usually held tightly in the non-functional anther. Nicholls (1932) has also noted the abortive anthers. These variations were random within any one colony and differences were often found between individual flowers on a single inflorescence. All colonies of *P. sullivanii* were interspersed with plants of *P. minor* apparently in a random manner.

Theories have been proposed that both *P. sullivanii* and *C. nublingii* arose from hybridization between *P. minor* and *Caleana major* R.Br. (Blaxell 1972). There was no evidence of hybridism in the colonies that I studied and this same opinion is expressed by Blaxell (1972) for *C. nublingii*.

The plants of *P. sullivanii* show substantial ovary development in the bud and during anthesis; and this led me to suspect apomixis. The swelling is not abvious in *P. minor* and it would appear to be related to the apomictic development of *P. sullivanii*. To prove this, specimens in bud of both species were removed and potted. The columns were excised from the buds and the flowers were then allowed to develop normally.

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Miscellaneous Notes On Australian Orchidaceae 2 - Reduction Of 6 Teratological Forms To Synonymy cont.

No ovary development occurred in the plants of P. minor, nor were seeds produced. Normal ovary swelling occurred in P. sullivanii however and apparently viable seeds were produced (at least identical in appearance to seeds collected from control plants).
P. minor is a very widespread and often common orchid and it is certainly remarkable that similar freak developments occur within populations of the species in the Victorian Grampians and the Blue Mountains of N.S.W.

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Prasophyllum fimbriatum R.Br.

Prodr., (1810), 319
Synonyms: Prasophyllum anomalum Rupp, Vict. Nat. 65 : 142 (1948). Type locality: Blue Mountains, NSW, leg. I. Bowden
Prasophyllum bowdeniae Rupp, Vict. Nat., 65 : 144 (1948). Type locality: Blue Mountains, NSW, leg. I. Bowden

Both of these species in my opinion, are self perpetuating apomictic developments from Prasophyllum fimbriatum R.Br. and have therefore been reduced to synonyms of P. fimbriatum R.Br. Their physiology and development closely parallel that of Caleana nublingii and Paracaleana sullivanii discussed above. The ovaries of all flowers swell very early in their development and are well advanced by anthesis. Most flowers last for very short periods if they open at all, and seeds are released in a short time. (Nicholls (1969) also observed that the flowers of these apomictic forms were very short-lived). Seed is produced from all flowers even those which have aborted or functionless stigmas and anthers.
A colony of P. fimbriatum at Mt. Wilson in the Blue Mountains was examined in March 1970 and had an array of unusual forms covering P. bowdeniae. Further specimens have been sent to me from other areas in the Blue Mountains by Stephen Clemesha and an area on the south coast of N.S.W. by Brian Whitehead (the variations covering both P. bowdeniae and P. anomalum). The apomictic forms are certainly bizarre and some extreme mutations occur. Apart from the labellum, the floral anatomy seems to be completely haphazard with patches of ciliate, labellum-like tissue appearing on sepals, petals and columns. In some cases the petals are articulated and appear to be teratological developments of the labellum. This apparently was a basic feature of P. anomalum.
The labellum itself is often unchanged although usually not as mobile as in P. fimbriatum. The column however is usually completely abortive and often with the stigma and anther on separate processes. In the majority of flowers I examined the anther was only a remnant of tissue containing no pollen. In some cases apparently normal pollinia were present, however these could not be withdrawn as they were tightly enfolded by the anther. As a further indication of the instability of the complex, considerable variation occurs between individual flowers on a raceme, indicating complete lack of coordination at a genetic level.

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Pterostylis obtusa R.Br.

Prodr., (1810), 327
Synonyms: Pterostylis crypta W.H. Nicholls, Vict. Nat., 6 : 207 (1945). Type locality: Hoddle Ranges, Toora, Vic. leg. R. Clark, May 1941. (Type examined)

Only three specimens are known of this orchid and they are well illustrated by Nicholls (l.c., 1969). I have searched the vicinity of the type locality on three occasions but without locating further specimens.
An examination of the specimens on the type sheet and the drawings of Nicholls shows that they are clearly teratological forms of Pterostylis obtusa R.Br. and as such I consider the name P. crypta to be a synonym of P. obtusa R.Br.
The specimens would appear to be petaloid forms of Pterostylis obtusa R.Br. a species which is not uncommon in some areas of Waratah Bay. Petaloid forms of Pterostylis occur infrequently relative to some other genera (e.g. Prasophyllum, Diuris) but still at a significant rate. The author has collected a number of these during field work including petaloid flowers of Pterostylis obtusa at Wulgulmerang, and the closely related P. alveata J.R. Garnet at Mallacoota.

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Miscellaneous Notes On Australian Orchidaceae 2 -

Reduction Of 6 Teratological Forms To Synonymy cont.

In most cases the labellum is the organ which has become petaloid and therefore functionless in the pollination process. Nicholls (l.c.) assumed that as the labellum was functionless the three plants represented a self-pollinating mutant, but whether in fact they were self-pollinating is not clear. *P. obtusa* is normally an insect pollinated species.

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Pterostylis nana R.Br.

Prodr., (1810), 327
Synonyms: *Pterostylis celans* Rupp, Vict. Nat., 61 : 106 (1944), Type locality: Portland, Vic., Oct. 1943

The details of *P. celans* closely parralel those of *P. crypta* discussed above. Examination of Nicholls (1969) drawings shows that *P. celans* is in my opinion, a teratological development of *Pterostylis nana* R.Br. and as such has been reduced to synonymy. The labellum of *P. celans* was immobile, petaloid and functionless. The author has collected several petaloid flowers of *P. nana* from widespread localities in Victoria and the species seems more prone to the production of freaks than other *Pterostylis*. The most notable specimen, from near Warrandyte, had three petaloid labella crammed within the galea.

The type locality of *P. celans* has long since been cleared (Beauglehole pers. comm.) but apparently the colony (or colonies) persisted for several years. This reappearance of the colony suggests a genetic change in the species which could have been maintained in two ways.

1. By vegetative reproduction - each plant of *P. nana* is capable of producing up to three new tubers on the ends of long underground fleshy roots. Small colonies build up fairly quickly in this way and genetic changes will be maintained.
2. Autogamy - Nicholls (1969) describes finding pollen on the stigma of immature flowers. There is, however, no indication as to whether the ovaries swelled and if fertile seed was formed. It seems likely that if the form was in fact self pollinating and stable, it would be more widespread through the area.

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Thelymitra aristata Lindl.

Gen. et Sp. Orch., (1840), 521
Synonyms: *Thelymitra murdochae* W.H. Nicholls, Vict. Nat., 219 (1934). Type locality: near Wonthaggi, Vic., leg., E.H. Homann, 1933

This is a peculiar orchid with an unusual history and one which in my opinion is nothing more than a teratological form of *Thelymitra aristata* Lindl. and as such I consider the name *T. murdochae* to be a synonym of *T. aristata* Lindl. Only a single specimen was ever located and the discoverer, E.H. Homann (pers. comm.), believed at the time that it was nothing but a freak. Nicholls however chose to describe the plant as a distinct species.

An examination of Nicholls (1969) drawings shows that the stigma is sac-like and separate from the remaining organs on the column. Such a state indicates a reversion to the primitive condition whereby the anthers and stigmas were borne on separate processes. This condition occurs in primitive orchids (e.g. *Apostasia*, *Paphiopedilum*) and is a fairly frequent development in teratological forms of terrestrial orchids (e.g. *Prasophyllum anomalum*/ *P. bowdeniae*.

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A CULTURAL NOTE ON SARCOCHILUS FALCATUS

Ted Gregory

I picked on Sarcochilus falcatus to comment on in this issue because it is a favourite from way back and is so easy to grow if understood and given a little bit of T.L.C!
Truly a marvellous orchid, from the little heavily marked lowland form to the glory of the myrtle ridges form that is purest white with flowers that cannot be covered by a 20¢ piece and with 12 flowers to the raceme not uncommon.
In my experience shade is one of the major requirements to grow S. falcatus with any degree of success; I grow them under 90% shade year round and throw bushes on the roof over them in the worst of the summer heat to help break the humidity for them. I've been associated with S. falcatus for many years and have seen more plants lost to humidity than any other single cause. They like air movement very much and anyone that can combine this and shade will grow them easily.
As far as artificial hosts are concerned, if your stars are right I guess you could grow them on anything, but the generally accepted number one preference in this area are ti-tree poles between one and four inches thick and from two to three feet long. I'll give a couple of reasons for the ti-tree before I wander on; firstly, if a hard type such as "prickly" is used your S. falcatus has secure board and lodging for fifteen years at least; secondly, when the pole finally conks out, you will find your S. falcatus still growing merrily on the ti-tree bark, which will still be intact, so you carefully clean the decayed wood out of the centre and then insert a new pole and you are back in business without your plant even turning over in bed.
Quite a few have grown them on tree fern slabs, or rounds, but they have not seemed to have done as well as those on ti-tree. Also, the tree fern population has a hard enough time to survive as it is, without being sawed up un-necessarily.
There are two or three other bonuses to be had from these poles as well: by hanging, you give yourself more bench space and you create that better air circulation for your S. falcatus at the same time. Last but not least, hanging gets the plants away from most slugs and snails. This is perhaps the major reason for hanging, as no fleshy rooted orchid can tolerate having its roots pruned by these blighters.
I think March-April is the best time of the year to do major surgery on S. falcatus, as this is the time of the year when they send out their new root growth and therefore will take to a new host with less setback. Any plant obtained should be examined and any damaged roots should all be cut off, as well as any long undamaged ones which should be cut back to about 4" long. If left long they seem to be more hindrance than help in getting the clone going again. After this, soak the plant in a mixture of Zineb and R.D.O or Formula 20 for a quarter of an hour. This will get the plant away to a healthy start, we hope.
Now take the plant and tie it firmly to the pole with pantyhose strips, tight but not tight enough to damage what roots are left. Hang them facing any direction for most of the year, but if you can twiddle them to face south for the worst of the summer, they will get that tiny bit extra relief from that killing heat and thank you for it later on.
Now that your S. falcatus is mounted, the next move is growing it successfully. With this species the secret is little and often: weak R.D.O and magnesium is my personal preference: as long as these things are used weakly you could hardly overdo them and they can take it all year round. Being on these poles they can take a lot of water, two or three times a week in winter of a morning; in the summer every evening. Insect and fungus control as in any plant, namely keep your eyes open and beat the devils before they beat you!
Here's hoping this has helped you grow Sarcochilus falcatus and increases your enjoyment of our native orchids as I think their best chance of survival is for you to culture them correctly and make them a popular garden plant, then they would be bred commercially and easily, and this would make them available without having to take them out of the bush.

Ted Gregory, R.M.B. 201 Taree. N.S.W. 2430

A.N.O.S. SYDNEY GROUP

Country and interstate members visiting Sydney should endeavour to meet members of the active Sydney Group and if possible attend one of their meetings. Contact the President Lloyd Bradford, 34 Tottenham Street, Balgowlah, 2093. Phone 948 8404.
The Group meets on the second Friday of each month and visitors are most welcome. Interesting lectures and plant benching, followed by plant descriptions are the order of the night. This Group is the original foundation branch of the Society and has been very active for some 15 years.

SPRING CULTURE NOTES

Dear Orchadians.

September is with us again, and what glories it brings to us all, man, beast, or plant, and especially those among us who have an affinity with nature. To see her rejuvenate life in every shape and form really makes life worth living.

By now every native orchid grower's bushhouse should be in it's full glory, bursting with the sight and scent of myriad dainty blooms, which is a reward of any grower who has maintained an interest in his or her collection throughout the previous seasons. But don't get too starry eyed, as no orchid grower can afford to relax his or her vigilance for too long. There are always pests waiting for a chance to decimate flowers and soft new growths if given half a chance. Whilst the flowers are about a puff of Diazanon dust is one of the best means of keeping your blooms and plants free of aphids and other insects that chew or suck without harming your flowers. If you want to fungicide your establishment whilst there are still a lot of flowers about, there are quite a few brands about that will not harm the flowers: Benlate (R) and Bavistin (R) being two examples.

As soon as the main flowering is over the usual feeding and fungiciding programme can be commenced. In my opinion the main thing with our natives and fertilizer is "little and often"; these plants were designed by nature to be fairly hardy and I think they are less prone to trouble if grown a bit on the hard side. Very lush plants seem to be more of an "invite" to disease. Fertilizer is a matter of personal choice, as there are many brands on the market that will do the job satisfactorily: only be sure to remember that plants are like human beings in one way, and that is that they will live longer and better on a balanced diet.

If you live in an area that has Dendrobium Beetles, be on the lookout for these devils once the weather warms up as they can work havoc in a collection if not kept in check. It's not the chewing that the adults do, which is bad enough, but the young that burrow into the new canes and demolish these, along with next year's flowers. They are hard to control with insecticides; it takes a lot to kill them, and, more often than not they lay some eggs before they die. The best control is a daily inspection, if possible, and if any beetles are seen, a quick squeeze will deal with the adult. If there is any sign of chewing, inspect closely in the vicinity for eggs, which will be glued to the plant around where the beetle has been chewing.

These eggs are elongated oval in shape, light yellow in colour and about 1/16" long. They are easily scraped off the plant with a fingernail. If you miss any eggs, in a few days time you will see wet and sticky patches on the leaves where the larvae are starting to demolish your plant. As long as you catch these little dears before they bore into the canes there won't be much damage done. If they get into the cane itself, cut the cane off below the chewers, seal it, and better luck next time.

I had my orchids attacked by the Banana Weevil last Summer as well as the Dendrobium Beetles. This weevil is gradually coming down the coast and could become a serious pest. I don't know if it breeds in orchids or not yet, but it sure can chew them up. It looks like an ordinary grain weevil, is greyish, and about ½" long, so keep an eye out for this beauty as well. These fellows seem to be fairly solitary as yet and will be spotted as one is looking for beetles, and seem to be killed easier by insecticide than the Dendrobium Beetles.

Once the flowering season is over, any plants that need repotting should be attended to before the new roots come if possible, as this saves the plant from having to grow two sets of roots in the one year.

Please remember, whatever potting medium you fancy doesn't matter very much as long as you have drainage as near to perfect as possible.

Good growing till next time.

Ted Gregory, R.M.B. 201, Taree, N.S.W. 2430

PLANT SWAPPING

Several members have expressed interest in plant swapping and your Society will make every endeavour to assist members in their quest. If you want a particular plant, or have too many of a particular species you may care to swap. Let us have your name, address and particulars of the plants. We will publish the details in The Orchadian as space is available. Keith Edwards our Hon. Secretary has too much D. striolatum and Peter Vaughan wants the Nth Queensland 'compact' form of D. speciosum. Anyone interested in swapping?

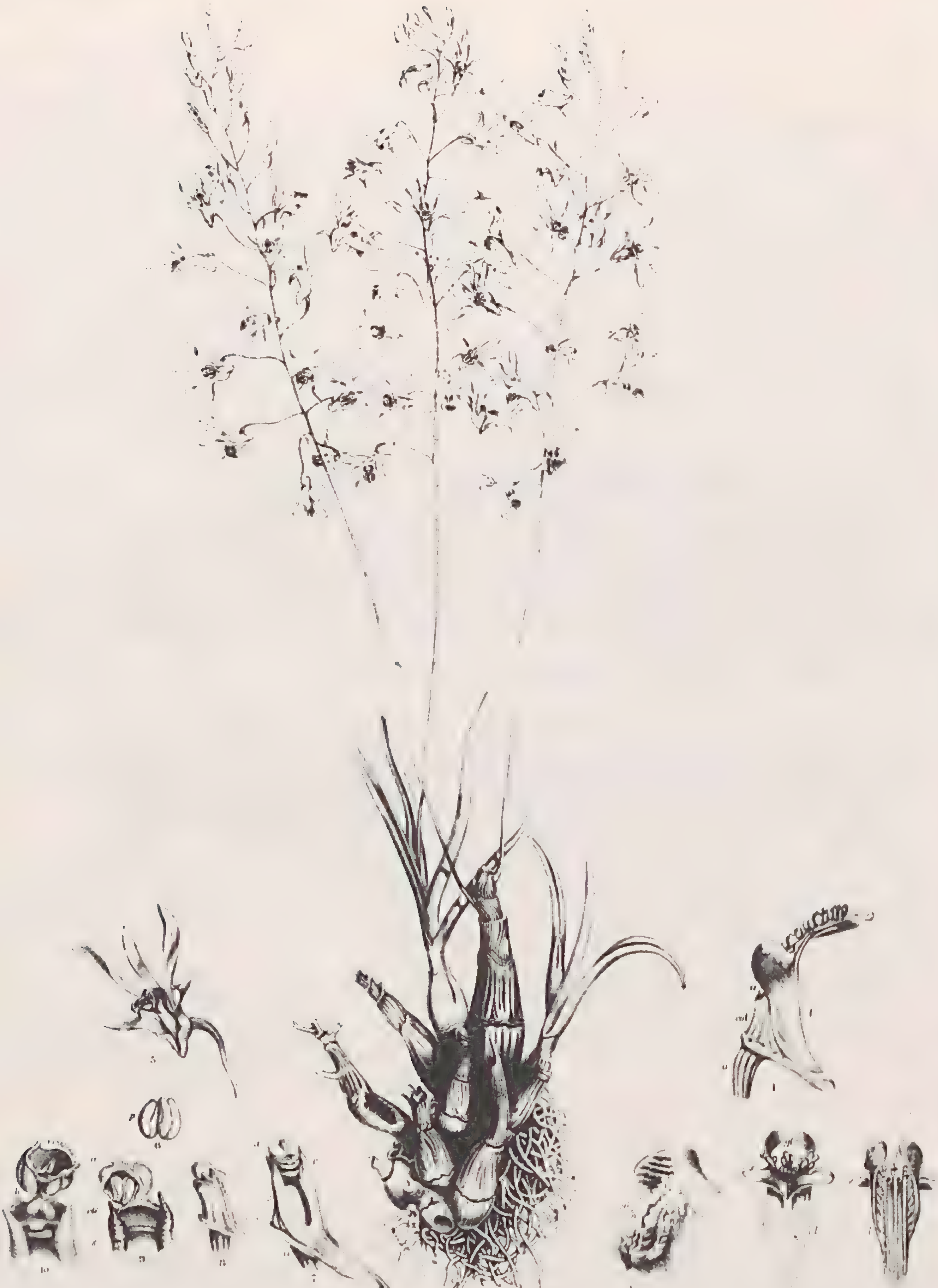
Dendrobium canaliculatum. (*R. Brown.*)

This pretty species is much better known under the name of *D. Tattonianum.* It is found in Queensland, but has not yet, so far as I am aware, been procured in New South Wales. It is rather variable in colour, and flowers in November. It is the species referred to by Mr. Carron as having attracted his attention and admiration when the illfated expedition under Kennedy was entangled in the swamps and back waters of Rockingham Bay, and as such may well be associated with the memories of a thorough botanist and of an intrepid explorer. Though rather frequently to be found in collections of Orchids in England it is not readily grown here in Sydney, even in the hot-house, and soon languishes in either green-house or bush-house.

The figure is taken from a plant kindly given to me by Sir William Macarthur.

EXPLANATION OF PLATE.

Fig. 1. Side view of labellum and column, petals and sepals removed. 2. Labellum, from the back. 3. Labellum, from the front. 4. Point of the labellum, showing glands. 5. Front view of flower. 6. Pollen masses. 7. Column, from the front. 8. Side view of part of column. 9. Top of column, showing anther displaced but retaining the pollen masses. 10. Top of column, showing anther empty and displaced, the hinge, clinandrum, rostellum and upper portion of stigma.



From Nature by R.D.FitzGerald, F.L.S.

On Stone by Arthur J. Stopps

DENDROBIUM *Canaliculatum.*

Lyperanthus ellipticus. *(R. Brown.)*

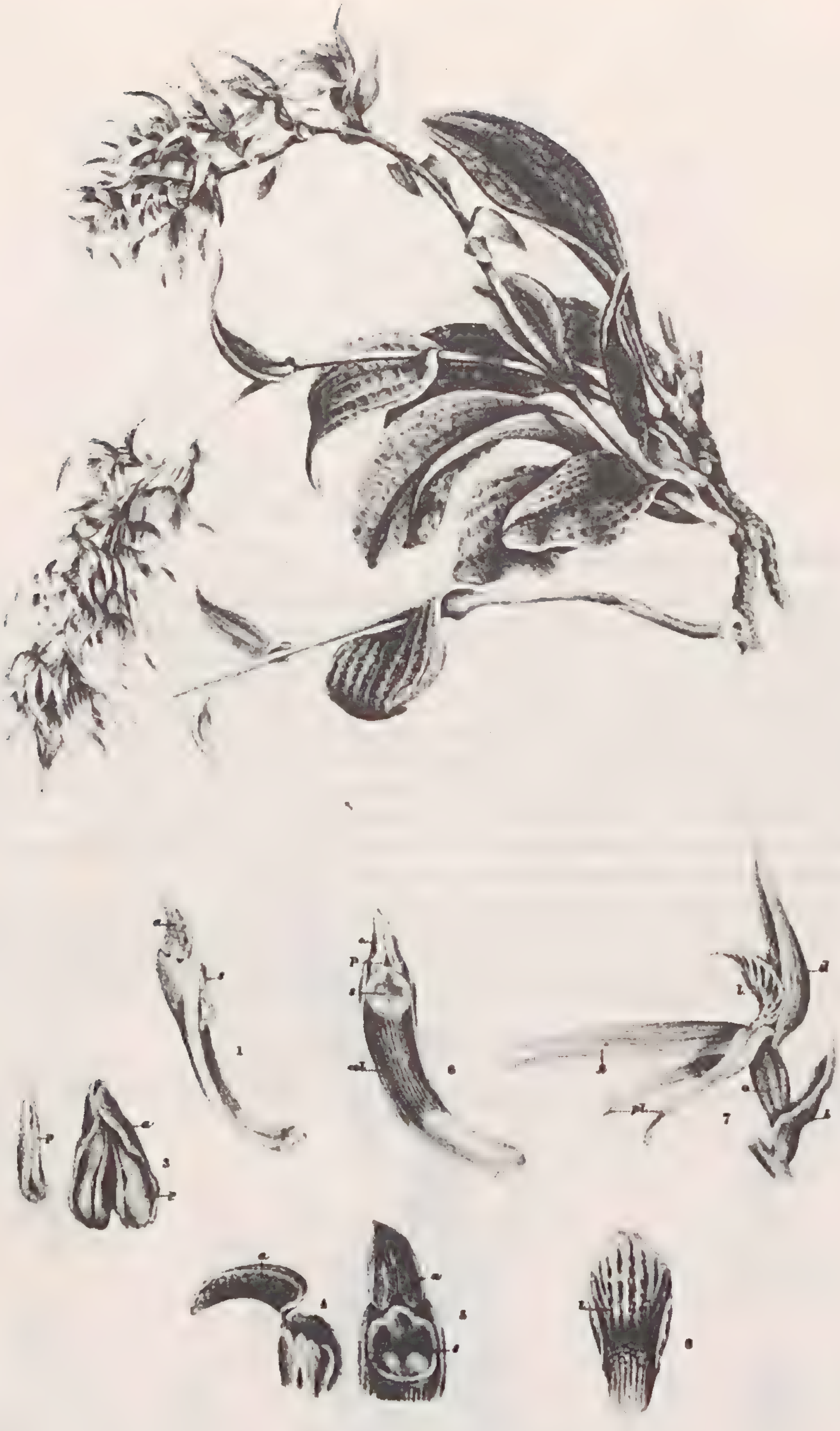
This is a very rare Orchid, very capriciously distributed.

In one bay on the north side of Sydney Harbour it has been found on a single rock. I know of no other locality where it can be procured nearer than the Blue Mountains, and there only in a few favoured spots. Why it should be confined to the yellow clay in certain crevices, where there are thousands of similar fissures, can only be accounted for by the seeds requiring a very extraordinary concurrence of circumstances to produce vitality—by the plants being very seldom fertilized—by their being in a young state the special prey of insects, or by delicacy of constitution. It is interesting to consider all or any of these causes as affecting plants in their native country. Has Nature produced them to let them hang on the verge of existence? Have similar inherent defects caused the destruction of others, without the interference of man—without his ever having seen them—without any great or violent change of circumstances or climate? If so, from whence has such imperfection come, and why should there be such imperfection? It can hardly be said that it is by design, or that the design was imperfect and inadequate to the end, though it may perhaps be accounted for by variation (in an unfavourable direction) from a more suitable type.

Lyperanthus ellipticus is interesting not only for its rarity, but for its being a link between the terrestrial and epiphytical Orchids, having in its creeping rhizome and growth on rocks the character of the Epiphytes, and in the form of the flower, especially the anther and stigma, that of the terrestrial. It is found following the crevices in damp sandstone rocks, in the yellow clay so frequently to be observed between the stratification. Its season of flowering is December.

EXPLANATION OF PLATE.

No. 1. Side view of column. 2. Pollen masses. 3. Anther, including pollen masses. 4. Top of column, anther thrown back, pollen removed. 5. Front view of same. 6. Front view of column. 7. Side view of flower. 8. Labellum.



From Nature and on Stone by R.D.Fitzgerald F.L.S.

LYPERANTHUS Ellipticus

ORCHIDS OF THE HASTINGS RIVER AREA

K & N Blanch

The Hastings River area is relatively rich in native orchids and in this article we will report on the species we have observed. The area encompasses the lower Hastings, middle Hastings River and Pappinbarra Creek through to the Bellangry area and the Wilson River and part of Middle Brother through to the Comboyne.

In the lower Hastings River area we have found *Dendrobium linguiforme* in three forms. One growing on rocks and *Casuarina* sp., has small leaves, while in the Wilson River area we have found a round leafed form which is not plentiful. On *Melaleuca* trees the species seems to develop longer leaves and is the more common form in the area.

Dendrobium tetragonum is not hard to find and some variation in growth characteristics occur. Some specimens have been found with short, thin stems and leaves more pointed than in the type form. Flowers were darker green. Port Macquarie specimens have very long stems and larger than normal flowers.

Oberonia palmicola has been found at Beechwood and on Big Brother Mountain in the lower areas. We find this species hard to grow in cultivation.

Papillilabium beckleri and *Schistotylus purpuratus* are quite plentiful on Middle Brother Mountain and in the Taree, Bellangry areas.

Sarcochilus australis, *Parasarcochilus spathulatus*, *Sarcochilus olivaceus* and another *Sarcochilus* as yet unidentified are found in areas around Pappinbarra, Bellangry and Bago.

Sarcochilus falcatus grows robustly on *Casuarina cunninghamiana*, mostly in the Pappinbarra area.

Dendrobium speciosum and *D. beckleri* have been found growing on *Casuarina* sp. Robust forms of *Plectorrhiza tridentata* are also found growing on the same trees.

Sarcochilus falcatus is found in several different growth forms. The paler green sickle leaf form bears a white to cream flower which is strongly perfumed, and has purplish stripes on petals and labellum. This form is seen on *Casuarina* and Lillypilly in the Pappinbarra area and usually flower earlier - about May-June. A form from the Bago area has darker, longer, thinner leaves and all white flowers, and grows on Iron Wood and Coachwood trees. *S. falcatus* mostly grows high up in the trees whereas *Sarcochilus olivaceus* and other *Sarcochilus* species mostly grow lower down.

Sarcochilus hillii is quite abundant in known areas of Bago and is found mostly in the lower gullies. At Pappinbarra it grows higher up the mountains and tends to have shorter leaves than specimens from lower areas. *S. hillii* grows mostly on Sassafras and Lillypilly trees.

Dendrobium speciosum is not so plentiful as *D. speciosum* v. *hillii* on the Comboyne.

Dendrobium speciosum v. *hillii* is quite common in the Bellangry - Pappinbarra areas. In one area we found an isolated clump of *D. speciosum* with stout, short pseudobulbs to 12" long which had cream coloured flowers.

In an area between Comboyne, Pappinbarra and the middle Hastings River where Coachwood, White Cedar and *Ficus* sp. are abundant we found white flowered forms of *D.* X *gracillimum*. Cream to yellow flowered forms of *D.* X *gracillimum* are quite plentiful.

D. gracilicaule with green flowers has also been found here.

Huge clumps of *D. speciosum* v. *hillii*, *Bulbophyllum aurantiacum*, *B. elisae*, *Sarcochilus falcatus* and *S. olivaceus* were all growing on the same trees, it was a collectors paradise!

Liparis reflexa is quite common on Bago, Comboyne and other rocky areas and is mostly seen growing with *Dendrobium kingianum*.

D. kingianum is also quite plentiful and comes in several forms and colours and contrary to what some authors have written plants from the Bellangry area do develop aerial growths.

Dendrobium pugioniforme is found growing on rocks in the Comboyne and on both rocks and trees in the Bellangry area. It was quite common once.

Bulbophyllum elisae is not very plentiful and does not last long in cultivation, even on its natural host branch.

Bulbophyllum exiguum and *B. crassulifolium* are not hard to find around the creeks in forest land. Another form similar to *B. crassulifolium* grows in the Port Macquarie area, but as yet we have not seen it in flower. The leaves are longer, thinner, and more branched in habit.

Calanthe triplicata is found in only a few areas here.

Dendrobium teretifolium grows on rocks in both the Bago and Comboyne. Some plants have been found growing on *Melaleuca* sp. but is becoming harder to find.

D. beckleri is quite common still, around the rivers and larger creeks.

D. tenuissimum is still plentiful around here also, mostly on *Melaleuca* sp. in semi-dry gullies.

D. aemulum is common on hardwoods. Both the'Ironbark' and 'box' forms. I have come to

continued p. 136

Orchids Of The Hastings River Area cont.

believe that there is a third form that has much thinner stems to 6" long, leaves thinner and darker, with a purple fringe, and flowers smaller than the other forms. It tends to grow further into the denser forest areas. We are able to study both the 'box' and 'Ironbark' forms as we have them both growing on our property. The 'Ironbark' form has stouter, reddish coloured stems, leaves darker and more ovate and the flowers have a pinkish tinge when fading. The 'box' form has leaves that are lighter in colour, longer stems that are brown in colour and the flowers are white to cream even when fading.

Cymbidium suave is found in three forms. One with really green flowers, the leaves wide and long. The second form has yellowish flowers with leaves shorter and harder, whilst the third form has brown and yellow flowers and very long dark leaves. An old tree stump (if possible) is ideal to grow them in.

We have quite a few different terrestrials growing on our property, but we have only identified a small number as they do not stay in flower very long and we cannot always be available at the right time.

Dipodium punctatum is plentiful here. We also have another species like it that has leaves and always comes up in the same place whereas *D. punctatum* pops up anywhere.

Diuris aurea grow everywhere in our paddocks, right up to the house.

Pterostylis decurva and *P. nutans* are found growing in moist areas here.

We have found other terrestrials but as yet cannot identify them. There is one that grows on rocks, usually in association with *D. kingianum*. It has a long tuber, pale lilac coloured, star shaped flowers and a distinct vanilla perfume. It is definitely an orchid as other collectors have seen our specimens. The leaves are sheath-like to 8" long and the flowers to ¾" across. (* This species appears to be *Thelymitra aristata* which has often been recorded in association with *D. kingianum* - Rupp, H.M.R. The Orchids Of N.S.W. pp. 8 and 116, Editor)

Rhinerrhiza divitiflora is still common in the Bago and other dense areas, with some variation in leaf colour and size.

In the Bago area several plants of what appears to be a natural hybrid between *Rhinerrhiza divitiflora* and *Sarcochilus olivaceus* have been found. However, we must wait until it flowers for further clues. *S. olivaceus* is plentiful in the same area.

We have seen some good specimens of *Peristeranthus hillii* found near Port Macquarie recently, but this orchid is very scarce in that area now. *Bulbophyllum minutissimum* was also found in the same place.

Plectorrhiza tridentata grows in moist gullies in this area and is quite variable vegetatively depending upon its host and local conditions.

Cymbidium madidum can be seen growing in the forks and hollows of giant swamp gums and 'bloodwoods.

Sarcochilus hartmannii is almost absent from this area. Some odd plants have been sighted in the Forestry areas, once it was quite common.

We have found some interesting natural bush hybrids that may prove worthwhile, we shall have to wait until they flower.

The orchids we have found have come from a 25km area of Beechwood and most are from private properties where we have the owners permission. Most property owners wish to preserve the orchids on their land now. As a result of logging and clearing, most orchids are now found in forestry areas or park lands and are therefore protected.

K & N Blanch, Beechwood, via Wauchope, N.S.W. 2446

A.N.O.S. GROUP ELECTIONS

A.N.O.S. Council would appreciate a brief note from Groups and Affiliates informing us of their new Committee members names and titles. With the recent wave of Annual General Meetings and Elections there must be many new names. Let us have the information and we will publish a full list for everyone's benefit as soon as soon as sufficient material is to hand.

NEW AUSTRALIAN NATIVE ORCHID HYBRIDS

J.J. Betts

The March and April registrations listed by the Royal Horticultural Society and published in recent issues of "The Orchid Review" included the following items of interest:

Name	Parentage	Registered By
DENDROBIUM		
" Goose Bumps	teretifolium X cucumerinum*	V & N Jupp
" Hilda Poxon	speciosum X tetragonum	Dr N. Grundon (I.A. Butler)

(* This is the first occurrence of D. cucumerinum as a parent in hybrid registration)

Noel Jupp has provided the following information on his hybrid:

Dendrobium Goose Bumps (D. teretifolium X D. cucumerinum). This hybrid has proved to be hardy and quick growing but does exhibit a little of the die-back associated with Dendrobium cucumerinum itself. However, it has proved a great deal easier to handle than this parent. The hybrid produces 5 - 6 flowers on a short, somewhat weak inflorescence with red-brown striations. The first plant to flower is mounted on tree fern fibre and produced a number of inflorescences in succession during the summer months. A second clone has since flowered, producing a somewhat crowded spike with flowers that are nearly white.

Dendrobium Hilda Poxon was created by the late Ira Butler as his cross number 202 and has become justifiably famous in orchid circles for the excellent shape and colour of its flowers. The flowers vary from yellow to deep butter yellow overlaid with magenta spots and striations. This cross would be one of the most ardently sought after native orchid hybrids.

BOOKS ON AUSTRALIAN NATIVE ORCHIDS

Peter Vaughan & Murray Corrigan

Many members of the Society have inquired about the availability of books on the subject and to make it easy for readers we have compiled a list of books in print and out of print (O/P).

We have only listed books on native orchids and a few others considered irrelevant have been omitted. All prices are approximate and our brief comments give only an opinion on the value of individual books.

Victorian Native Orchids Vol. I by C.E. Gray. Published by Longmans 1966. O/P

Victorian Native Orchids Vol. 2 by C.E. Gray. Published by Longmans 1971. In print. $7. A small, comprehensive field reference work, especially valuable for its photographs of species. (Anyone want to sell Peter Vol. 1 ?)

Native Orchids of Tasmania by M.J. Firth. Printed by C.L. Richmond 1965. O/P A 90 page guide to the native orchids of Tasmania. Unfortunately the author died some time ago and it appears unlikely that this excellent work will be reprinted. Copies appear occasionally in second hand bookshops.

The Orchids of N.S.W. by H.M.R. Rupp, with Supplement by D.J. McGillivray. Issued from the National Herbarium of N.S.W., as Flora of N.S.W., No. 48 Orchidaceae. 1969. In print $5. Available from the N.S.W. Government Printer. This is a facsimile of the 1943 edition with an excellent Supplement. Comprehensive in its coverage of N.S.W. orchids and a "must" for any serious student.

Orchids Of The West by Rica Erickson (2nd. Edition). Published by Paterson Brokensha 1965. $4. An excellent reference with some 107 pages and 32 plates (many in colour). Available from the University of W.A. Press.

Flora of South Australia Pt. 1 Orchidaceae, by Black. Published by the S.A. Gov. Printer 1974. $2. This is a botanical work and valuable in this respect.

Flora Of New Zealand Vol.11, by Moore & Edgar. N.Z. Gov. Printer 1970. NZ$4.50 In print. A "flora" of the orchids of N.Z. a botanical work but interesting.

A Handbook To Plants In Victoria by J.H. Willis. Melbourne University Press. 1962. $9. In print. A complete botanical work, very good on distribution and habitat.

Flora Of The Sydney Region by Beadle, Evans & Carolin. Published by Reed. 1 72. $14 In print. A large work of 724 pages covering the flora of the region, with 28 pages devoted to the orchids.

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BOOKS ON AUSTRALIAN NATIVE ORCHIDS cont.

Australian Indigenous Orchids Vol. I by A.W. Dockrill. Published by S.G.A.P. 1969. $30 in print and available from S.G.A.P. Unfortunately the price has only just been steeply increased. An excellent book which no orchid lover should be without, a milestone in the study of Australian orchids. Get a copy before they exhaust!
Australasian Sarcanthinae by A.W. Dockrill. Published by A.N.O.S. 1969. O/P $6. This work preceded Dockrill's "Australian Indigenous Orchids" and was the only up to date reference until the reprint of Rupp, and the appearance of Dockrill's major work which included the Sarcanthinae.
Orchids Of Australia by the late W.H. Nicholls. Edited by D.L. Jones and T.B. Muir. Published by Nelson in 1969. O/P
An especially valuable reference particularly in regard to terrestrial orchids. The original works were to have been published in parts and although never completed by Georgian House the parts published are available occasionally second hand and improve any collection.
Australian Orchids by Rosa Fiveash. Published by Rigby. 1974. In print $18. The work covers a large range of species however the drawings are only fair.
Ground Orchids Of Australia by M.R. Pocock. Published by The Jacaranda Press. 1972. O/P
Quite a hand book with very good photographs but unfortunately the book has disapppeared from the bookshops.
Australian Ground Orchids by Densey Clyne. Published by Periwinkle. 1970. $1.50. In print. The photographs are very good and the work is excellent for novice enthusiasts.
Australian Rock and Tree Orchids by Densey Clyne. Published by Periwinkle. 1972. In print. $1.50. Again an excellent little work with fine photographs.
To be continued in the December issue of The Orchadian.

THE AUSTRALIAN ORCHID FOUNDATION ORCHID SEED BANK

At a meeting of the Research Committee of the Australian Orchid Foundation in February 1977, it was resolved to set up an orchid seed bank. The inaugural Curator, Mr. L.J. Lawler, is now actively soliciting for seed and hopes for a modest, but definite, start in 1977.
All seed will be handled, exotic or native species. The seed bank is particularly anxious to obtain seed of native Australian species that are rare or endangered. The Curator hopes to enlist the aid of all Botanic Gardens, but he is most anxious to learn of growers who would be prepared to donate seed.
It is anticipated that a list of seed available will appear in this journal early in 1978.
A nominal charge will be made to cover costs of handling and postage.
In the meantime all correspondence is welcome at this address: Australian Orchid Seed Bank, c/- L.J. Lawler, Department of Biochemistry, University of Sydney. Sydney, N.S.W. 2006. Telephone (02) 692 2235 day and (02) 848 9150 evening.

A.N.O.S. VICTORIAN GROUP TUBER BANK

Readers should also remember that the Victorian Group have been running a very successful native orchid tuber bank for some years. I have noted that their scheme seems to work mainly in one direction - outwards, and this is the way it should work. Provided that those who are benefiting from this excellent service also contribute tubers for the benefit of others. Should you want to participate contact the group's Hon. Secretary Mrs Robyn Wootton, Lot 1, Zig Zag Road, Belgrave Heights. VIC. 3160.

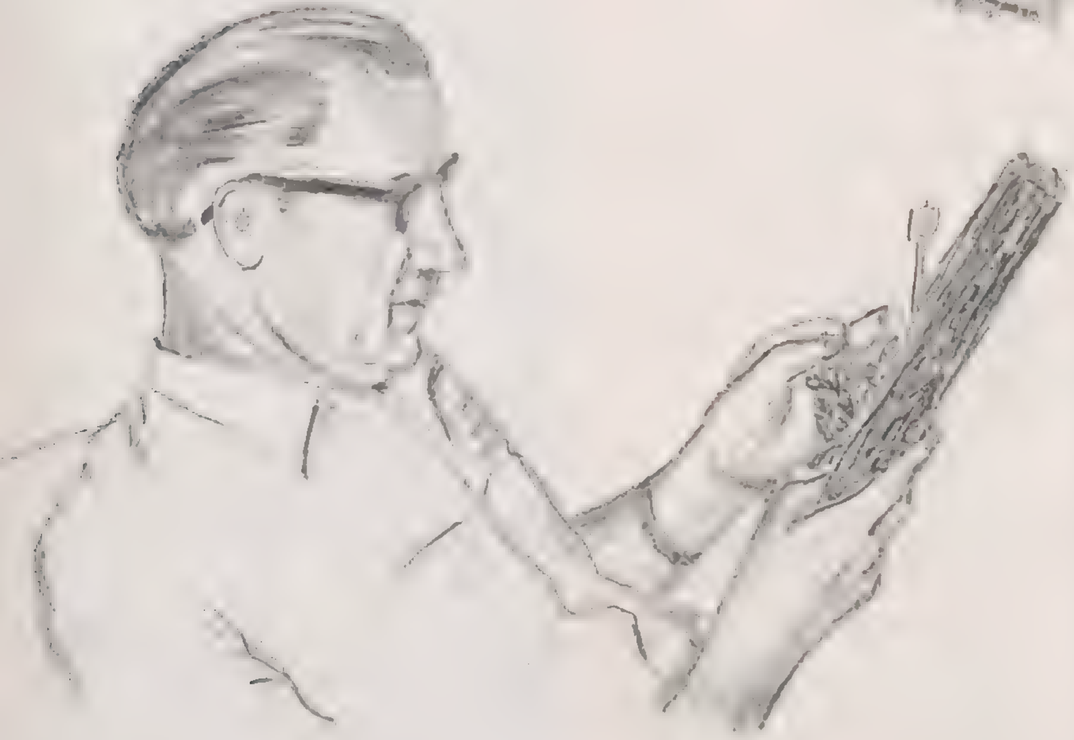
A.N.O.S. SPRING SHOW 1977

The third annual Spring Show of The Society has just concluded at the Mona Vale Memorial Hall in Sydney. The Show has been a resounding success with greater public participation during the two day show than has been seen previously. The hard working Show Marshall Norm Hilliger with his stalwarts were hard pressed to handle the large number of enquiries on native orchids from the public. Benching was of a very high quality and I am sure Norm will want to tell you more of their show in the December issue of The Orchadian. Any Groups wanting information on staging a show should contact Norm through The Society.

WINNERS OF THE IRA BUTLER MEMORIAL OUTSTANDING ACHIEVEMENT TROPHY - 1977

The Ira Butler Memorial Trophy Committee has recently honoured Walter T. Upton and Roger B. Bedford for their outstanding achievements in the hybridising and development of Australasian native orchids. Both have been deeply involved in Australian native orchids for very many years and have created many of the superior hybrids now gracing our show benches. They were presented with their inscribed trophies at the February meeting of the Orchid Society of N.S.W. by the Committee Chairman Mr Eric Gordon.
We are indebted to Mr Keith Betts for the fine portraits of the two recipients.

Roger Bedford has been interested in horticulture since his childhood in England but only became interested in native orchids after arriving in Australia in 1952, age 22.
He began collecting plants and commenced hybridising in 1956. Amongst his many outstanding creations are D. Peter (D. fleckeri X D. falcorostrum); D. Peter X D. kingianum and D. ruppianum forma magnificum X D. fleckeri. Without doubt D. Peter has been his most outstanding hybrid to date, its huge yellow, perfumed flowers create a sensation wherever benched.



Walter T. Upton has been studying native orchids since childhood. He vividly recalls accompanying his father on walks through the English countryside observing terrestrial orchids.
Since his arrival in Australia in 1950 Walter has been fully involved in our native orchids and was the founder Secretary of our Society. His Dendrobium Ellen, D. Bardo Rose and D. Penny Ann creations are well known to all native orchid lovers.

EDITORIAL

Murray Corrigan

Members who attended our Annual General Meeting on the 3rd September will be aware that I did not nominate for re-election as your Editor. Instead I nominated for, and was elected as Assistant Editor.

I have had the very great honour of editing The Orchadian since its inception fifteen years ago and in that time have produced 746 pages of I hope, interesting and informative material. I hope that I shall have the pleasure of serving you as a Councillor for many more years. The task of editing The Orchadian is difficult and extremely time consuming, requiring considerable research and extensive reference material, as any of our Group Editors will tell you.

Long standing members will know that The Orchadian used to be professionally typed and then printed. As costs accelerated it became necessary to recude our production costs and at this time (1965) The Society purchased a second hand typewriter and I commenced typing each issue for direct reproduction. This step halved our production costs for each issue.

Leisure time is a commodity that we all relish and I have found it increasingly difficult, as time goes by, do devote the 40-60 hours per issue necessary to edit and type each issue of The Orchadian.

As I said at the Annual General Meeting, "It's time for a change"!

I am convinced that the Editorship of The Orchadian is now too much for one person to handle in an honorary capacity. The Council has agreed with this concept and has formed an Editorial Committee under the chairmanship of a Managing Editor.

Your Orchadian is our only means of total communication to all members of The Society throughout Australia and overseas and must continue to improve, providing members with a wider diversity of material reflecting your interests and opinions.

I thank you for the pleasure of serving you, and for the distinct honour of the Life Membership conferred on me three years ago.

To the large circle of friends I have acquired through The Society I would like to say 'thank you' for your unfailing assistance and very great generosity. I hope I shall now have more leisure time to attend Group meetings and outings.

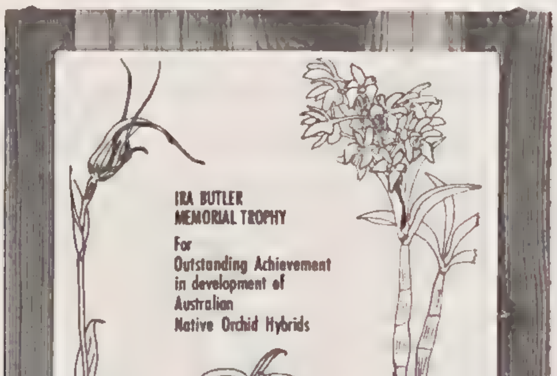
In closing I must mention the great job your Council does in attending your affairs. They deserve your continued and renewed support for the many long hours they spend in honorary capacities attending to the multitude of details associated with such a large society.

We have overcome considerable obstacles in our formative years and will go on to bigger and more influential activities in the future, I hope to share them with you!

Murray Corrigan

IRA BUTLER MEMORIAL TROPHIES

The Ira Butler Memorial Trophies were created by A.N.O.S. and the Orchid Society of N.S.W. to perpetuate the work of the late Ira Butler. The man who created so many of the fine native orchid hybrids benched today. To stimulate activity in hybridising and to honour those hybridists who have demonstrated outstanding achievement.



Australian Native Orchid Hybrid Of The Year - This trophy may be awarded each year to the best hybrid native orchid presented to the Judges of the Orchid Society of N.S.W. for an Award. Irrespective of its achievement for an Award, the plant becomes eligible for the trophy. The Ira Butler Memorial Trophy Committee will decide each year if a plant so presented, is deserving of the trophy.

Outstanding Achievement in development of Australian Native Orchid Hybrids - To be awarded at any time by the Committee to a person, or persons, deemed worthy of the Trophy. Nominees may apply for nomination, or may be nominated by any person, including the Committee. The trophy is to honour the recipient's work in the field of native orchid hybridisation and his outstanding achievements. You will have seen on page 139 of this issue that Walter Upton and Roger Bedford have been honoured.

The Trophies are very similar in design, consisting of etched copper laminate mounted on planked cedar.

Journal of the
Australasian
Native
Orchid
Society

THE ORCHADIAN

Dedicated to the study and care of Australasian indigenous orchids

Patron: James H. Willis

DECEMBER, 1977

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Secretary K. Edwards
Treasurer P. Colin

Please address all correspondence on membership, change of address, announcements by Groups and Affiliates etc. to the Secretary at the above address.

On all editorial and advertising matters please write to: J.J. Betts, 33 Memorial Ave., St Ives, N.S.W. 2075.
Articles should be typed in duplicate preferably on A4 size paper; double spaced with 4 cm or more, lefthand margins.

ANOS annual membership is $5.00 which includes family membership and covers four issues of this journal.

Available from the Secretary at $2.00 each (overseas Aus. $2.50) are ANOS badges depicting the blue sun orchid *Thelymitra ixioides* (see above)

Local Groups of ANOS
- Sydney
- Warringah
- Newcastle
- Wollongong
- Darling Downs (Qld.)
- Victoria
- South Australia

Affiliated Societies
- Native O.S. of Qld.
- Blue Mtns. & District O.S.
- Native Orchid Study Group of the O.S. of Western Australia.

(In general, **Group** meetings are concerned with native orchids exclusively.

Affiliates are generally devoted to exotic orchids but have a particularly strong interest in Australasian natives as well).

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A field guide to *Calochilus* species in the Sydney area.
A study of *Calandenia alba* and *C. carnea.*
Terrestrial hybrids.
Autum cultural notes.

Back Issues of the Orchadian are available from the Secretary at (Aus.) $10 (including postage) per volume of 12 issues (Vols. 1–4) and (Aus.) $1 (plus postage) per copy of each issue of Vol.5.

Membership Renewal. The Hon. Treasurer has advised that there are still a number of subscriptions overdue for 1977–1978. Make sure you continue to receive the journal by posting him a cheque now. It was due on 1 July, 1977.

EDITORIAL

The first task for a new editor must be to pay tribute to his predecessor. In our case this is especially true. We owe so much to Murray Corrigan for his work over 15 years as Editor that it seems we cannot do better than echo his own eloquent words in his last "Editorial". The good news is, of course, that he hopes to have more leisure to attend Group meetings.

As for the future: the usual cliche is to say it rests with you, our readers, with your constructive criticism and your contribution of material for publication. We hope you like the new format of the journal and that it will stimulate your response; for we all know that format is one thing and content is another.

We have offset our increased costs for this issue by selling advertising space for the first time. You will see that it is limited to selected reliable advertisers and could well be described as a service to readers, (judging from the constant questions we were asked by the public at our Spring Shows, about where to buy the orchids they saw on the benches). We ask that you support the advertisers and let them know we sent you. The alternative would have been, of course, to raise the subscription fee.

We should like to introduce a "Letters to the Editor" department with our March, 1978 issue. This will be your chance to exchange ideas and information which you may feel does not warrant a full article. Group Secretaries might please look at p.148 of this issue. Letterwriters may wish to give us their views, for example, on the Australian Orchid Foundation and what it is doing — especially in view of the A.O.F.'s rejection of an A.N.O.S. request for support in publishing a book by Neville Howcroft. Again, you may like to give us your views on Mr. Howcroft's careful article on orchid survival (p.150)

Finally, we bring you at long last, our publication of "A Check-List of Australian Native Orchid Hybrids", free with this issue of the Orchadian, but $1.50 hereafter. We are extremely grateful to Dr. N. Grundon of Darling Downs Group for the groundwork he did on this project and for his patience in awaiting the final outcome.

A Golden Opportunity for Collectors of Rare Books on Orchids

Subscribers to the Orchadian will know that over the past two years we have reporduced as a centerfold supplement, each quarter, lithographed plates with accompanying text from the orginal published work of R.D. FitzGerald F.L.S. In order to do this, A.N.O.S. Council purchased from a seller of rare books, Part 2 of FitzGerald's AUSTRALIAN ORCHIDS This Part comprises a folio of 9 lithographed prints (uncoloured) from the hand of the author. If you look back over your issues of the Orchadian from December 1975 (page 13 reproduced for cover illustration*) you will realise the quality of these prints. Eight of the nine plates were reproduced up to Orchadian Vol.5, No.6 of December 1976. Reproductions subsequent to that were from prints photographed in the library copies at the Mitchell Library and at Sydney University's Fisher Library. This method of reproduction is considered less than satisfactory and there will be no more of these. As we have now finished with the Part 2 prints we purchased, A.N.O.S. Council has resolved that as our copy of Part 2 was purchased out of members' funds for a specific service to readers (now completed) there is no further justification for Council itself to retain such a valuable property on behalf of members. It is therefore now offered for sale to the highest bidder among our members. The procedure will be to receive bids in writing addressed to the Secretary at our P O. box number, and received no later than Friday 17 February 1978. In the event of two or more equal bids being of highest status, we shall accept the bid first received. The result will be notified in the Orchadian which is published after the sale has been settled. Council has fixed a reserve price below which no sale will be made. Remember, the higher you bid the more you will be assisting our future publications. (The prints measure 19¾" x 13¼".)

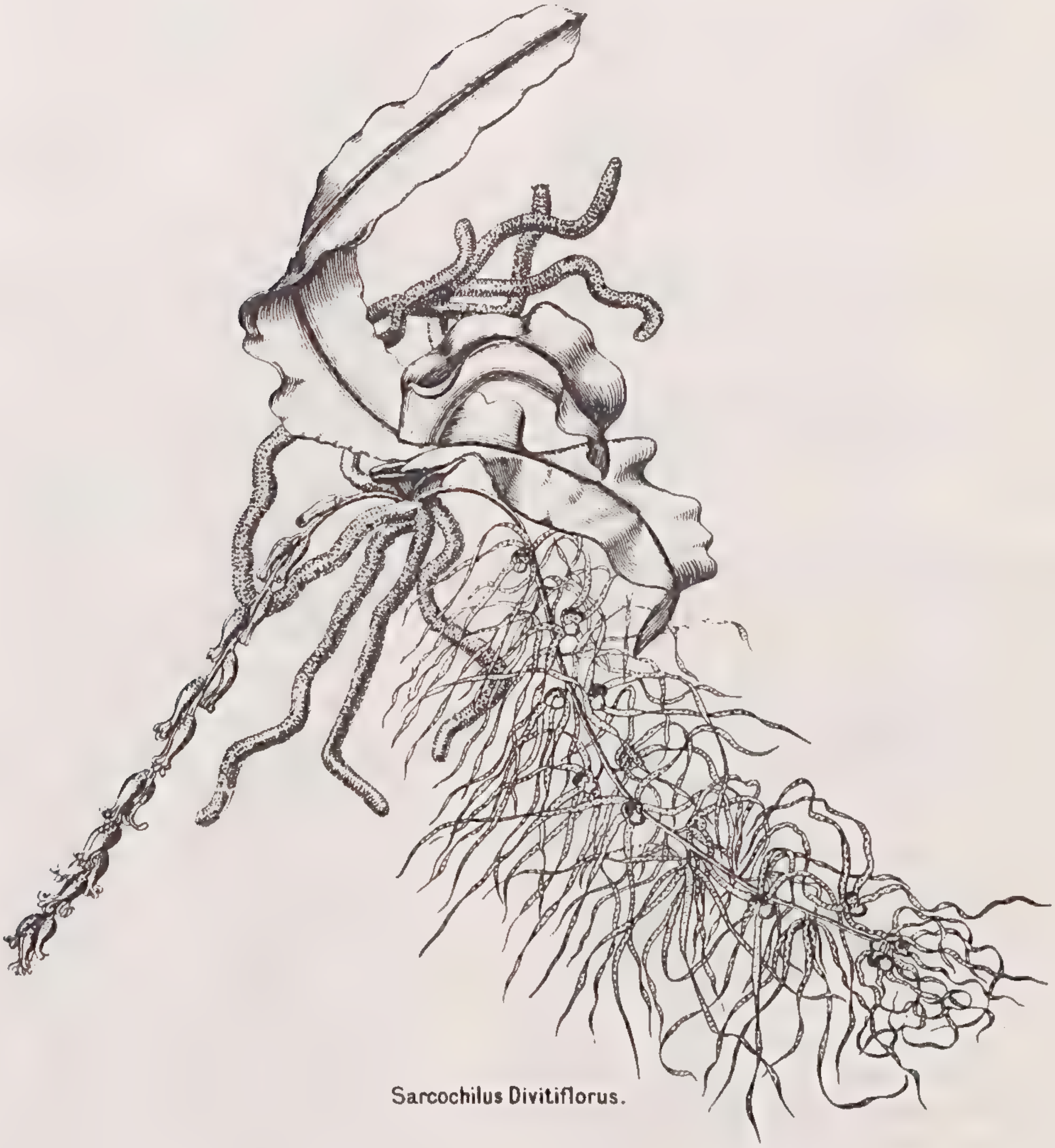
*Also reproduced in the present issue at p. 143.

Notice of Motion to Amend the Constitution of ANOS

The Notice of Motion proposed (Orchadian June, 1977) was not dealt with at the A.G.M. in September owing to withdrawal by the proponent. It would not have achieved the removal of minor flaws in the Constitution, which should all be tidied up at the same time. Of greater importance to local Groups is the need to remove any implication that Groups must comprise members who are also financial members of the central or parent body. An appropriate Notice of Motion will be presented by the Secretary at the next A.G.M.

A Cultural Note on *Rhinerrhiza divitiflora*

by Ted Gregory



Sarcochilus Divitiflorus.

I have often wondered what this fantastic orchid did to be inflicted with a name like this. Latin comes fairly easy to me, but this one still makes me run for the dictionary now and again, and for the rest of this note it will be known as plain old R.D. for the sake of my spelling and writer's cramp. I should not rubbish the old R.D as one once obliged me with thirteen spikes bang on show day, which gave me a first prize that is hard to organize with any orchid, let alone old R.D.

R.D. is another one of those orchids that are worth growing for their foliage alone, with those leathery leaves of deepest green which may span up to fourteen or fifteen inches on a well grown specimen. Then there is the charm of those great rambling roots, which may travel twenty feet or more up or down a tree trunk in search of sustenance. The abrasive feel of these same roots of course led to the common name of Raspy Root by which this orchid is generally known.

This orchid grows over an extremely wide range of habitat in this part of the world, from the low coastal scrubs to the highest rainforest and myrtle ridges. R D. will be found on almost any host tree in the scrub, but if one wants to see the giants of this species, then the place to look is in the big myrtle scrubs where the best plants will be found growing right to ground level in the deepest shade you could imagine.

As you can guess from the above comments, one of the main requirements to grow R D. successfully in the shadehouse is shade, almost one hundred percent of it if possible and even though it will grow to ground level in Nature I find it does best in captivity five or six feet off the ground if this can be arranged. A cool shady corner is better than a hot shady corner if my own experience is any guide.

If you happen to obtain a plant with long roots on it still in good condition, do not cut them off as they will readily send out laterals just like a cattleya, which helps to get your plant on the move quicker once it is remounted. The old ti-tree pole is in a class of its own as a new host in my opinion. Pick one two or three feet long as R.D. likes to let those roots ramble if possible.

Sit your plant on the pole and wind any long roots carefully around the pole, then tie the lot on firmly but not tight enough to cut those roots. Once again, the old pantyhose cut into strips is the best material for the job. By this time the plant should have been soaked in fungicide and R.D O. or some other starter, which procedure should be standard practice with the establishment of any orchid plant.

These plants will establish any time of the year, but I think early autum would be the optimum time. The plant may hang fire for a while, but once it moves you will almost need a speedometer on those roots, as they will travel many feet in a year if well looked after.

Feed and fungicide little and often as with Sarcochilus for best results and your plant will really be a showpiece. Do not worry if you can't see much root growth on ti-tree, as quite often the roots will dive into the bark and burrow like mad in the stuff, then emerge fat and frisky further down the pole.

If your stars were right, you may have a plant that will keiki freely and give you a specimen plant so much quicker; for some reason some will keiki freely yet others never will.

(The illustration, by R.D. FitzGerald is from the covers of his AUSTRALIAN ORCHIDS published 1875 – 1894. Note the change in genus from *Sarcochilus* to *Rhinerrhiza* which was made by Rupp in 1951 – See below – Ed).

Rupp to Fordham
on *Rhinerrhiza Divitiflora* — a monotypic genus

In preparing the above note for the Editorial Committee, I decided to check my facts as to the date of the change of genus. I went first to Dockrill's "Australian Indigenous Orchids", p. 711. This referred me to Rupp's "The Orchids of N.S.W." which was first published in 1943 (by the Sydney Herbarium) but Rupp also, at that time, listed it at p. 132 as *"Sarcochilus divitiflorus* F. Muell ex Benth., Fl. Austr., VI (1873), 292; FitzG., Austr. Orch., I, 6 (1880)". Following his botanical description, Rupp shows the recorded distribution of the species and begins with 'North Coast. Macleay River, FitzGerald 1870 . . . This plant, which is quite amenable to cultivation, is unlike any other Australian species of *Sarcochilus* . . ."

As my copy of Rupp is the facsimile reprint of 1969, which was brought up to date with a Supplement by D.J. McGillivray, I found, at p. 173: *Rhinerrhiza divitiflora* (F. Muell. ex Benth.) Rupp in Vict. Nat. 67: 206–210 (1951)". Then I thought of the manuscript letters of Rupp to Fordham which Murray Corrigan had kindly allowed me to borrow. Turning over these well preserved original letters, I came to one dated 18th September, 1950, and read:

> "In the next issue of the Victorian Naturalist, I am removing Mueller's *Sarcochilus divitiflorus* from that genus altogether, and making it the type of a new genus, *Rhinerrhiza* ("Raspy-root"). I am backed up by Hunt, Mair and Gilbert (editor of A.O. Review)".

Further on, in a letter dated 31st October, 1950:

> "I have just finished 'A Review of the Genus Sarcochilus in Australia.' It will be submitted to the Linnean; but I have to wait for (I think) the next issue of the Victorian Naturalist in which I give S. *divitiflorus* the boot out of *Sarcochilus* (did I tell you ?) and make it the type of a new genus."

And, finally in a letter of 6th May, 1951, on the same subject:

> "I anticipated some opposition, but so far it has been hailed with approval".

For those who like the feel of history as well as botany and horticulture, there is real treasure to be mined in Rupp's letters. If readers indicate their wishes to us, we shall consider extracting more pieces for you.

For those who are still wondering what Ted Gregory finds when he runs for the dictionary, "R.D." would come out as "the raspy-root with the rich-looking flowers".

— J. J. Betts.

Book Review

"Australia's Native Orchids" by W. Watson Sharp.

K.G. Murray Publishing Co. Ltd., Sydney — 144p — $11.95 (Our copy from the publishers)

This book was first published in 1970 and the review copy is from a recent reprinting of the original. The contents consist of eight chapters; from hints on growing our natives, their classification, a list of genera and species, to an index of common names. The text is liberally interspersed with line drawings of flowers of various species, large and reasonably clear black-and-white plates, and twelve colour plates of several species in the centre. The text is chatty and often informative, but many of the "facts" presented are incorrect or, at best, misleading.

The publication is marred by some sections (including, unfortunately, the largest section) which are badly presented and contain many errors; e.g., the chapter on classification. Here, oversimplification of this aspect of orchidology imparts incorrect information and the authorship of the name of a plant is confused with the technique of simply describing a species. The reader is probably even more confused after reading this chapter than he was before ! The terms "variety" and "species" are used haphazardly and not always correctly, and on p. 23 the genus *Thelymitra* is called a "sub-tribe" ! The nomenclature used throughout is quite out of date; as it was also in 1970 !

Chapter 4, which is the list of genera and species, takes up almost 100 of the book's 144 pages. The genera and species are arranged alphabetically, a short general description is given for the genus and a more detailed one for each species. The margins are sprinkled with sketches of some of the species described. It is many of these sketches which are highly stylised, inaccurate and in some cases, grotesque caricatures of the species depicted. Many of the descriptions lack accuracy, and many of the distributions and habitats mentioned are totally incorrect. The derivations of the generic and specific names are mostly accurate, but some are quite incorrect. An example is *Bulbophyllum baileyi* (spelled *baileyii)* which is a "vigorous genus growing from a creeping rhizome of up to six feet long and two inches thick, . . . It is common . . . in the coastal area of southern Queensland." (The errors in this are indicated by underlining).

Calanthe, on p. 40, also deserves a mention. It is stated that this genus is terrestrial, but "approaching an epiphyte in habit." ! This extraordinary paragraph goes on to say, "This is an East Indian and Mexican genus ' and then states that it grows " usually on or among stones and sand" and is a "native of Queensland"! The sketch accompanying this bears little resemblance to an orchid let alone a *Calanthe !*

The distribution of *Cymbidium canaliculatum* is given as "northern half of N.S.W.", and *C. suave (suauve)* is stated to grow on "tree stumps, on tea trees *(melaleuca),* mountain oaks *(casuarina)* and tree ferns" ! To my knowledge, this species has never been found growing on tree ferns, nor on *Melaleuca* species. The common "hosts", species of *Eucalyptus* and *Angophora,* are not mentioned as such.

Dendrobium aemulum is stated to grow "on rocks" and "the topmost branches" of trees, two habitats in which it is certainly not found, except perhaps on very rare occasions. *Dendrobium beckleri (becklerii)* is said to be "mostly found high up in the branches of swamp oak *(Casuarina glauca)* trees standing in creek beds" ! Also, "thin flower spikes up to four feet long," is another extraordinary statment.

Dendrobium racemosum is described as having a pseudobulb nine inches long and very long leaves. *D. rigidum* is said to have a "number of long canes", with "several leaves distributed along the cane". while *D. speciosum* is "at home on a variety of trees, probably preferring the river oak . . and less frequently on rocks." Readers of this review will know how incorrect these excerpts are.

I could go on for several more pages, quoting errors galore in most of the species described in detail and in later chapters. However, to sum up: this book has only been reprinted in 1977 without any attempt to correct the mass of errors in the orginal 1970 edition. These errors were pointed out to the publishers in 1971, but it is unfortunate that they did not see fit to make any changes at all in the reprinting. I can only recommend that no Australian orchid enthusiast should buy this book, nor should anyone wishing to learn anything about our native orchids buy it or even read it ! There are many quite good and informative books on the subject available, but this is certainly not one of them and I fear that many years will ensue before the effect of this book on the unsuspecting has "worn off".

D.F. Blaxell,
Senior Botanist,
Royal Botanic Gardens,
Sydney.

(Editorial note: We are grateful to Mr. Blaxell for this timely review and warning to readers — especially as we believe the book has gone into a third reprint without amendment. We have naturally excluded it from the booklists published in the September issue and in the present issue. Its errors are unpardonable, but the omission of any acknowledgement of sources — though betraying a lack of scholarly responsibility — is perhaps merciful to those sources.)

Dendrobium chloroleucum Schltr.

N.H.S. Howcroft.

This species belongs in the section *Latourea* which includes some twenty two described species from the New Guinea region. It closely resembles *D. rhodostictum* F.Muell. but its flowers are generally smaller with distinct differences in the labellum and callus. The plants of *D. rhodostictum* are generally larger and more robust, whilst those of *D. chloroleucum* are much more slender and usually shorter. The latter's stems are usually dark brown and the former's yellow brown.

Description

Plant epiphytic, erect; rhizomes short; *roots* thin, glabrous; stems up to 29 cm tall, slender over two thirds their length, thickening in the upper portion to 6-10 mm diameter, cylindrical, furrowed with age. *Leaves,* two to three at apex, oblong to elliptic, obtuse, smooth, 2.5 – 4.5 x 2.0 – 2.8 cm (Fig. 1A); *Racemes* short, 3 – 6 cm long, slender, glabrous, produced from apex of stems, bearing up to 5 flowers, slightly arched. *Flowers* greenish-white to cream with green and purple venation in labellum, glabrous, often lax, partly spreading, (Fig. 1B–C). *Dorsal sepal* oblong to ovate, slightly apiculate, 12 – 15 x 5 – 6 mm (Fig. 1F); *Lateral sepals* oblong, apiculate, 12 – 15 x 5 – 6 mm (Fig. 1G). *Petals* spathulate, broadest portion obliquely obovate, 15 – 19 x 8 – 11 mm (Fig. 1E). *Labellum* quadrate-rhombic in shape when flattened obscurely bilobed at apex, base narrow, with three narrow, slightly raised ridges forming a callus, extending from the base to the middle of the labellum, 12 – 20 x 13 – 17 mm (Fig. 1D). *Column* short with three short lobes around the clinandrium, 2 – 3 x 2.5 mm (Fig. H-T). *Anther* smooth, reniform (Fig. 1K); pollen yellow ± 1.5 x 0.5 mm (Fig. 1J). *Ovary* short, glabrous, with slender pedicel up to 25 mm long, with a small deciduous bract at base.

Habitat

This orchid is usually found in the upper branches of *Lithocarpus* and *Castanopsis* trees at 1,500 to 2,000 metres. These regions have annual rainfalls between 1,883 and 2,800 mm, and are subject to morning and evening mists.

Distribution

Dendrobium chloroleucum has been collected in the highlands of Papua New Guinea, at a number of localities around the Bulolo area in the Wau subprovince, at Agaun in the Milne Bay Province, and at Efogi in the Central Province of Papua. These localities suggest that this species has a wide-spread distribution associated with the distribution of *Castanopsis* and *Lithocarpus* forests.

Flowering Season

September to January in the Bulolo area, and probably during other months in other localities.

References

Schlechter, R. (1914) Die Orchidaceen von Deutsch Neu Guinea; Text, pp. 490–491

Schlechter, R. (1923) Figureen Atlas Zur Den Orchidaceen von Deutsch Neu Guinea; Tafel 165, Nr. 620.

Acknowledgement

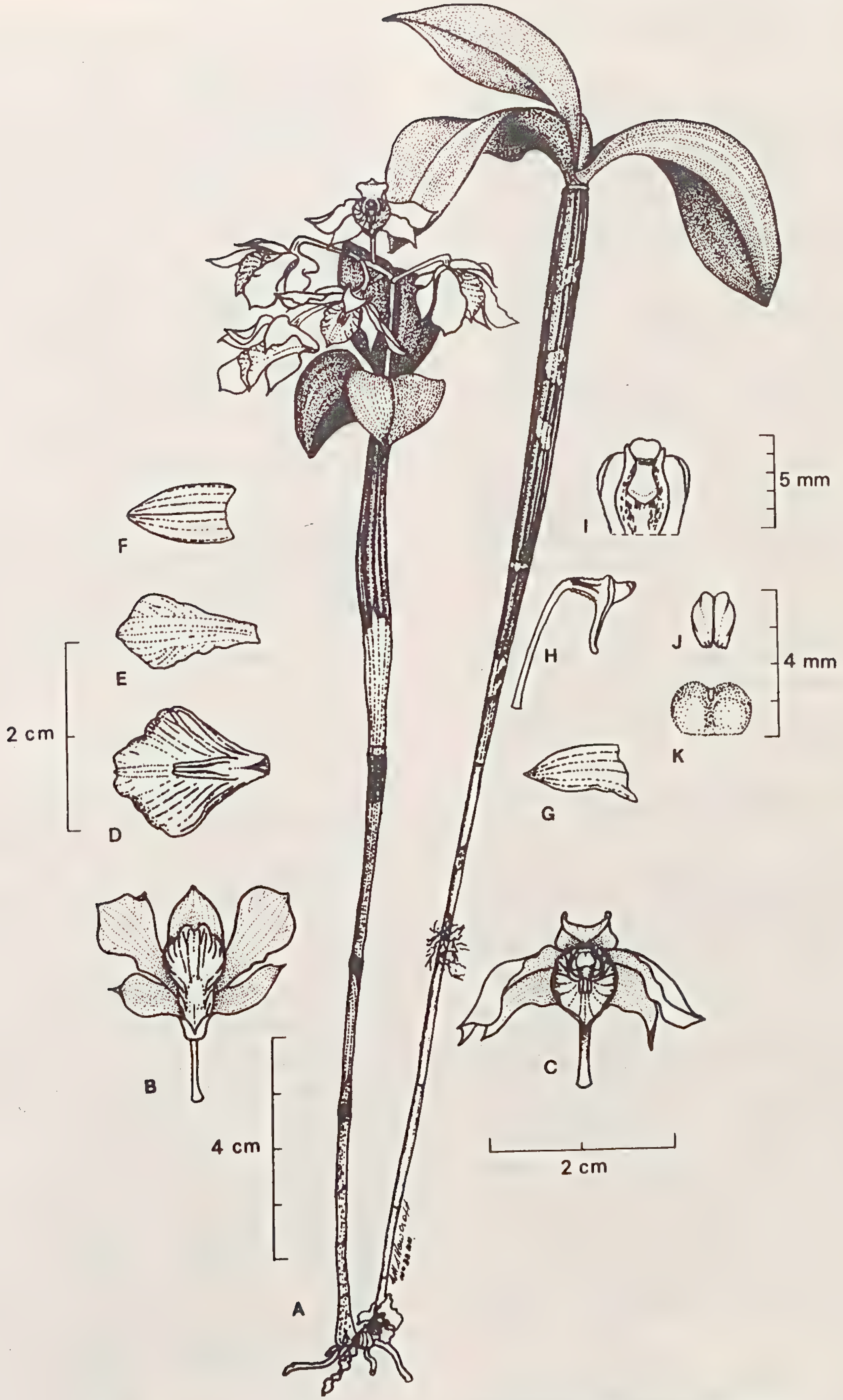
I thank Mr. M. Galore and Mr. E. Henty of the Lae Herbarium for the reproduction of my illustration of *D. chloroleucum* Schltr., Mr. Phil Spence for this copy of the translation of Schlechter's script; Mr. J. Dodd formerly of U.P.N G. for information on collection localities in the Papuan region.

Note:

The illustration (NH32, Lae 1521) produced for this paper has been lodged with the Lae Herbarium for reference purposes and cannot be reproduced without permission of the author.

Orchid Seed Flasking Service.

Details of this A.N.O.S. service to members were published in The Orchadian Vol.5. p.20 (and amended Vol.5, p.104). In brief cost to members is $6 for first flask (mother and first re-plate flask) and $4 each for subsequent flasks. If your seed does not germinate we refund $3. Remember: your cheque for $6 must accompany the seed pod you send us – also your name and address, name of species or hybrid parents and date of harvesting. State number of flasks required. Special Note: We have had some complaints about this service. Generally they turn out to be due to failure to observe the simple rules. Remember: A.N.O.S. will not be responsible if you do not write to the Secretary. Handing a seed pod to a member of Council (or anyone else) without a letter to the Secretary with details as above may result in confusion. Flasks now available for sale to members at $6 each are: *Dendrobium bairdianum* (very limited) and *Dendrobium smillieae* ("album" form – 1 flask only). Note that, as with any "album" form all seedlings may not be true to form, but should give mostly whites.



1521 Dendrobium chloroleucum Schltr.

ANOS Spring Show, 1977 — Show Marshall's Report

The Third Annual Spring Show was a resounding success and a number of new members enrolled on the spot and paid their fees.

There was an increase in the number of exhibitors, although it was again a disappointment in the lack of support from other Societies who, I am led to believe, are "strong in natives." In the week following our show, I visited a number of other shows and am convinced that no other show can compare for the variety of native species and hybrids benched.

It was a pleasure to see so many visitors from out of town, especially our friends from Newcastle who have made the trip every year.

Many thanks again to the stalwart band of helpers who turn up every year and give so much time and effort and make my job that much easier.

This year we staged special displays, namely a scientific display by Phil Collin; and Murray Corrigan showed his collection of herbarium specimens while Josie Hilliger and Charlie Fourro benched a display of native ferns.

The exhibitors are to be congratulated on the presentation and flowering of their plants and we hope to see them again next year.

— N. Hilliger.

(We have omitted the Show Marshall's list of prize winners. Suffice it to say that the Silver Medal for Champion Native Species went to Mr. J. Walker for his *Pterostylis pedunculata* (another triumph this year for terrestrial orchids over epiphytes) and the Silver Medal for Champion Native Hybrid went to Mr. M. Corrigan for his *Dendrobium* Ellen. A special class for New Guinea Orchids was introduced this year and, not unexpectedly, both first and second went to P. and M. Spence for their *Ceratobium* Hybrid (unnamed) and their *Dendrobium polysema* x D *johnsoniae.* Four out of the total of 11 prizewinners were members of A N O S. Council and while this deserves our praise and gratitude to them for helping to make the Show so impressive — the best native show in Sydney, as Norm Hilliger has reported — we want more "outsiders" to take up the challenge next year. It is completely open and perhaps the only room for improvement is in getting more exhibitors from as far afield as possible.

Once again, the hard work done by Norm Hilliger in organising this Show has rewarded both the people of Sydney, by bringing our orchids to them, and A N O.S. by bringing in funds and new members.

— Editorial Committee)

ANOS Groups

Sydney Group's New Committee for 1977—1978

At its October meeting, held in conjunction with the Annual General Meeting, President Lloyd Bradford vacated his position after three years, but will remain active in the role of immediate Past President for the next twelve months. Lloyd is one of Sydney's pre-eminent growers and exhibitors of native orchids (as well as exotic species) and members of the large North Shore Orchid Society have come to realise that when a particularly fine specimen plant appears at their monthly benching of Australian Natives, it is most likely to be Lloyd Bradford's. Not infrequently specimens like this win "Best of Evening" or "Popular Vote" against exotic orchids. So we owe much to Lloyd on that account as well as for the time he has given to the A.N O.S. Sydney Group as President and to the central Council of A.N.O.S. as Vice-President.

The Sydney Group's annual election was presided over by Joe Betts and the following new executive was elected:

President:	J. Walker
Vice President:	D. Barnham
Secretary:	P. Vaughan
Treasurer:	G. Wells
Editor:	J. Bruhl
Committee:	B. Bushell R. Calkin M. Harrison P. Weston

Country and Interstate members visiting Sydney and wishing to meet members of this Group should try to attend one of their meetings held on the second Friday of each month. Please telephone Jim Walker on 419 2529 (27 Stafford Road, Artarmon, 2064).

Other Group Committees.

For the benefit of subscribers to the Orchadian who are contemplating joining local A.N.O.S. Groups or visiting their localities, we shall publish from time to time any changes following annual general elections. Would Group Secretaries therefore please give us the details of current office-bearers and the telephone number for contacts; and then keep us up to date continuously. For State Groups outside New South Wales we ask that they regularise this by formally appointing an "Associate Editor" of the Orchadian and thus ensure that we also publish scientific and cultural material representative of all States.

Books on Australian Native Orchids

We continue, here, the listing prepared by Peter Vaughan and Murray Corrigan and published in part in the September issue of the Orchadian. We have touched up the remainder of their list in some minor details. During October we had a helpful letter from Mr. Jim Simmons, Librarian of the Native Orchid Society of South Australia who supplied us with "a working list of books and publications on the subject as both desirable acquisitions for our (N.O.S.S.A.) library and a reading guide to members". Following the list by Vaughan and Corrigan, therefore, we now add those works listed by Mr. Simmons and not already included in our lists. By way of correction of the September issue, Mr. Simmons has pointed out that "The Flora of South Australia" – Part 1, by J.M. Black is currently out of print and not available from the S.A. Government Printing Office. The Orchidaceae section of this volume was written by Dr. R.S. Rogers and should be read in conjuction with "Supplement to J.M. Black s Flora of South Australia ' by Hansjoerg Eichler. This volume amends and updates much of the earlier publications of Rogers. A number of members and others have written to A.N.O.S. in recent times asking about the availability of Nicholls's "Orchids of Australia" (now out of print). For their benefit, Mr. Simmons informs us that a good source of hard-to-get out of print books is: Miss Doris Eddey, 30 Kandinia Road, Glen Iris, Victoria 3146, who is reported to have a number of volumes of Nicholls at present. They are the leather bound and numbered copies which were limited to 150 copies at publication.

BOOK LIST (continued from September, 1977).

O/P = Out of Print

Orchids of Western Australia by A.S. George and Herb Foots. O/P
Very good photographs and habitat descriptions.

A Guide to Australian Native Orchids by Roger B. Bedford 1969, Angus & Robertson. O/P
Has been described by some as interesting, but not always botanically accurate. In fact, it is beautifully illustrated both in its line drawings and in its colour plates. Often the reader will find clues in this book that will not be found in larger, more important works.

The Orchids of Victoria, by E.E. Prescott. Horticultural Press, Melbourne, 1928. O/P

Orchids of Green Mountains, Lamington National Park, Qld. by C.W. Harman, 1968.
A $1 booklet of 20 pages (no illustrations). Covers the epiphytes well, but only a few terrestrials. Mainly useful to guests or visitors in the area as a local guidebook. Obtainable from O'Reilly's Guest House, Green Mountains.

Orchid Trek, by David L. Jones.
$1. Available through the A.N.O.S. Victorian Group. Covers a trip to Iron Range Qld. and is very good, and readable, on the habitats.

Cultivation of South Australian Native Orchids, a cheap but valuable publication published by the Northern and Eastern Districts Native Orchid Society. ("Perhaps N.O.S.S.A. will reprint this informative work" – comment by P. Vaughan).

Australian Native Orchids in Colour, by Leo Cady and E.R. Rotherham, Reed $6.
This book is now reprinted and available in the bookshops. The colour photographs and information are first class and the book is beautiful to handle. It would make an excellent Christmas present.

Sixth World Orchid Conference, Commemorative Brochure and also the Proceegings. Both O/P
Both were very good with top authors covering quite a wide range of topics.

Supplementary List by J. Simmons on Native Orchid Society of South Australia

(as amended by M. Corrigan)

Supplement to Flora of South Australia
by Hansjoerg Eichler. Government Printer.

Orchids in Australia
By Fred Moulen 1958. Australia Edita Pty. Ltd., Sydney. O/P

Australian Native Orchids
By Australian National Herbarium.

Flora of Victoria
Government Printer Melbourne. 1931. O/P

A Census of South Queensland Orchids
by T.E. Hunt. R.G. Gilles – Brisbane 1948. O/P

Some South Australian Orchids – 1909
Government Printer – Adelaide. O/P

Orchids of the National Parks and Reserves
H. Goldsack 1953. Government Printer – Adelaide.

Flora of the Sydney Region – Handbook of Vascular Plants of the Sydney District & Blue Mountains
by N.C.W. Beadle, D.D. Evans, R.C. Carolin. Published by Authors – Armidale, N.S.W. 1962.

An Introduction to the Study of South Australian Orchids
by R.S. Rogers – Government Printer – Adelaide. Published by Education Dept. Adelaide – 1911. O/P

Flora of Victoria
by A.J. Ewart – Government Printer – Melbourne 1931. O/P

A Checklist of the Orchidaceous Plants of North Queensland
by A. W. Dockrill – Nth. Qld. Naturalist's Club – Cairns – 1966.

Australian Orchids – 2 vols
R.D. FitzGerald – Govt. Printer of N.S.W. Sydney 1875–94. To be reprinted in facsimile and published in 1978.

A Survey of Orchids in Natural and Man-made *Araucaria* Forests in Papua New Guinea

(Presented to the Botanical Society, PNG, at Goroka 13 August, 1977) by N.H.S. Howcroft © Copyright

New Guinea appears to be one of the few countries left where there are still many orchids of botanical and horticultural value yet to be discovered, and consequently there has been an upsurge in interest shown by orchid collectors for New Guinea orchids throughout the world since the official announcement of a commercial venture to sell Papua New Guinea orchids.

Orchid collecting on a commercial scale has had a romantic flavour about it since the 1880's inspired by such reputable firms as Veitch, Sanders and others. However, there are now reports from various countries that certain orchids are endangered due to overcollecting, and it would seem from observations, that Papua New Guinea orchids could go the same way despite the repeated assurances by those that are concerned, that steps have been taken to conserve our minor forest product – the orchid. This has yet to be satisfactorily demonstrated despite all the publicity.

Many people today still consider the orchid as indestructible, and capable of reproducing itself in sufficient quantity to survive repeated, or, by conservationist standards, overcollecting.

An orchid can produce many thousands of seeds per fruit. Since mortality is high it is necessary to produce as many as this to ensure that the species is perpetuated. The processes of reproduction however are much more complicated. Pollination in orchids can be carried out by three means: insects, birds and by self-fertilization. The first two often ensure that by cross fertilization a population has a healthy genetic base, also it now appears that some species, and populations of species may be solely out-crossing to produce fertile seed for survival, and without the assistance of birds and insects can only proliferate in a restricted area by vegetative means, thereby becoming vulnerable to eventual extinction if environmental conditions change too sharply.

This paper compares orchid populations in two Forest situations to see if orchid species can readily replace themselves after a severe distrubance.

The first situation is the natural stands of *Araucaria* forests in the Bulolo-Wau region which are rich in orchid flora, and the second a man-made *Araucaria* forest established after logging, clear-falling and burning, which is, where orchids are concerned, the ultimate in destructive processes.

The observations as they are, leave much to be desired in methodology from a scientific point of view. They are [illegible] collection of observations made over 12 years throughout both the natural and man-made stands, but may give some idea of the ability of the orchid genera to recover from catastrophies.

THE NATURAL FORESTS

There are two species of *Araucaria* in the Wau Sub-Province. These are *Araucaria cunninghamii* commonly called Hoop Pine, and *A. hunsteinii*, known as Klinkii Pine. Of the two species, the first is most favoured by epiphytic orchids, evident by the greater number of orchid species to be seen on the Hoop, while only three have been observed on Klinkii.

Generally the *Araucaria* forest here ranges from about 900 metres to 2,000 metres in altitude in a rainfall zone between 1600 to 1883 mm, occurring in what look like pure stands, however they are usually mixed with other species of trees, among which are also many good orchid host plants.

The forest floor itself is the habitat of many interesting terrestrials, and together with the epiphytes, there have been 96 species tentatively or positively identified. Of these there are 38 terrestrials (Table 1), and 68 epiphytes (Table 2) It is pretty certain that there are more species to be found in this region. Of the species listed in these tables, 62 species are ranked as being fairly common uniformly, or in patches (3) and 34 are ranked as occurring occasionally but are conspicuous (2), and 10 uncommon, rare or inconspicuous (1).

THE MAN-MADE FORESTS

The earliest plantations were established when logging was completed, and the remaining forest felled and burned. The first of the plantations was established in this manner in 1949–1950. This establishment technique ceased about 1968 when enrichment planting started, permitting the remnants of the logged-over forest to remain.

In the old technique, strips of green breaks containing unfelled remnant forest were left for fire protection, thus some orchid populations were preserved.

Recorded observation in the stands established by the old technique showed that terrestrial orchids are the first to reappear. In some cases it is likely that these survived the hot fires because their tubers were well protected beneath the ground. These orchids are *Cryptostylis,* (1 sp.) *Eulophia,* (1 sp.) *Habenaria* (1 sp.) and *Nervilia* (2 spp.). Other terrestrials were noted in plantations as young as six years of age and the incidence of these plants increased with plantation age. Compared with the species occurring in the natural forests, only 12 species out of 38 could be ranked as common (3), and 15 were completely absent (O), These figures are summarised in Table 3 A.

Epiphytic orchids appear to start returning to the plantations that are about age seven; generally the incidence is patchy and the most prevalent tribe represented is the *Sarcanthinae* (nos. 55, 59, 60, 67 and 68) in Table 2. Comparing the species from the natural forests with those occurring in the plantation only, one species could be ranked as common (3) and 9 species occurring occasionally but are conspicuous (2), 3 species were uncommon. (1). Of the 68 species occurring in the natural forests, 55 species were completely absent from the plantations. These figures are summarised in Table 3 B.

DISCUSSION

It is apparent from the recordings that although orchids are capable of returning to a disturbed area, the population size and composition can be different, and their return dependent on many things such as seed source, seed production requirements, regeneration conditions and their genetics.

There is some speculation as to where the seed sources of plantation orchids are. It is possible that seed can be brought in by wind over long distances, but it is thought that the green breaks where some of the more common orchids occur, are the most likely natural source, being so close.

The absence of many species may be due to the removal of their host trees, as some genera and species appear to be host specific; as an example already mentioned, many species occur on hoop pine and only three occur on klinkii in the Wau and Bulolo areas, some species occur on cedar but not on other trees. Alternative hosts do occur. An inhospitable micro-environment brought about by floristic changes in the macro-environment is also likely cause for the absence of orchids, as well as the possibility that the orchid was not common in the original forest.

It is noteworthy that all the plantation orchids have several things in common and that is they are all insect pollinated, they often bear large crops of fruit, they flower several times a year and are both outcrossing and self compatible. Bird-pollinated orchids such as *Dendrobium chrysoglossum,* which is very common in the crowns of natural hoop pines, are absent from the plantation stands.

Orchids that appear to enjoy cloud and mist regions high in the crowns of trees are absent in the plantations at higher elevations. Some of these orchids may still be seen in adjacent natural stands but fruit and flower production does not occur regularly, and in many instances the species do not appear to be common.

CONCLUSION

The observations presented and discussed suggest that there is a need for research on orchid populations and their ability to regenerate.

With commercial orchid collecting on the increase in this country, there is a need to examine the effects of constant collecting on populations, and for better supervision of collecting, and to impose restrictions on the collection of certain species. Finally, using the observations here as an example it seems that commercial orchid collecting in logging areas is more to be recommended than to encourage unsupervised large scale collecting from the wild.

TABLE 1

Check list of the Terrestrial Orchids in the Araucaria Forests of the Wau sub-province

		Occurrence	
		Natural	Plantation
1.	Anoectochilus sp.1	2	0
2.	Aphyllorchis cf A. elata Schltr.	1	0
3.	Apostasia wallichii R.Br.	3	0
4.	Acanthephippium papuana Schltr.	2	2
5.	Cryptosylis cf C. fulva Schltr.	2	1
6.	Calanthe chrysantha Schltr.	3	0
7.	C. englerana Krzl.	3	3
8.	C. finisterrae Schltr.	3	3
9.	C. cf. orthocentron Schltr.	3	3
10.	C. longifolia Schltr.	3	0
11.	Cheirostylis cf. C dendrophila Schltr.	2	1
12.	Corymborkis veratrifolia Thou. ex. Bl.	3	3
13.	Corybas sp. 1	1	0
14.	Cymidium ensifolium (L.) Sw.	2	0
15.	Dipodium pandanum F. M. Bail.	3	3
16.	Epipogum roseum (D,Don) Lindl.	1	1
17.	Eulophia emarginata Bl.	2	3
18.	E. zollingeri (Reichb.f.) J.J.Sm.	1	0
19.	Galeola cf. G. montigena Schltr.	2	2
20.	Geodorum pictum Ldl.	1	1
21.	Goodyera venusta Schltr.	1	0
22.	G. rubicunda Ldl.	3	1
23.	Habenaria sp.1	1	1
24.	Liparis sp.1	3	3
25.	Liparis sp.2	2	0
26.	Lepidogyne sceptrum Schltr,	3	0
27.	Malaxis sp.1	3	2
28.	Malaxis sp.2	2	0
29.	Malaxis sp.3	2	0
30.	Nervilia sp.1 (cf.N. arogoana Gaud.)	3	3
31.	Nervilia sp.2	1	1
32.	Phaius flavus Lindl.	3	0
33.	P. montanus Schltr.	3	3
34.	P. tancarvilliae (Banks) Bl.	3	3
35.	Plocoglottis sp.1	3	2
36.	Spathoglottis cf. S. papuana F.M. Bail.	3	3
37.	S. altigena Schltr.	3	3
38.	Zeuxine sp.1	2	0

TABLE 2

Check list of the Epiphytic Orchids in the Araucaria forests of the Wau sub-province

		Occurrence	
		Natural	Plant-ation
1.	Acriopsis javanica Rainw. ex Bl.	3	2
2.	Adenoncos papuanum Schltr.	3	0
3.	Agrostophyllum sp.1	3	0
4.	sp.2	3	0
5.	sp.3	2	0
6.	sp.4	2	0
7.	Arachnis longicaulis Schltr.	2	0
8.	Bulbophyllum cf. B. cruciatum J.J.Sm.	3	0
9.	B. cf. B. contortisepalum J.J.Sm.	3	0
10.	B. fletcheranum Rolfe.	2	0
11.	B. grandiflorum Bl.	3	0
12.	B. longifolium	3	0
13.	B. cobolbon Schltr.	3	0
14.	B. cf. rarum J.J.Sm.	2	0
15.	B. cf. B. sessile (Koen) J.J.Sm.	3	0
16.	Ceratostylis sp.1	3	0
17.	sp.2	2	0
18.	Coelogyne asperata Ldl.	3	0
19.	C. beccarii Rchb.	3	0
20.	C. fragrans Schltr.	3	0
21.	Dendrochilum longifolium Rchb.	3	0
22.	Dendrobium anosmum Ldl.	2	0
23.	D. acianthum Schltr.	3	0
24.	D. antennatum Ldl.	2	0
25.	D. bambusaefolium ?	3	0
26.	D. bifalce Ldl.	2	0
27.	D. cochlioides Schltr.	2	0
28.	D. chordiforme Kranzl.	3	0
29.	D. chrysoglossum Schltr.	3	0
30.	D. flagellum Schltr.	3	0
31.	D. cf. D. hymenocentrum Schltr.	1	0
32.	D. johnsoniae F.Muell.	3	0
33.	D. lineale Rolfe	2	1
34.	D. musciferum Schltr.	3	0
35.	D. ophioglossum Rchb.f.	3	0
36.	D. polysema Schltr.	2	0
37.	D vandoides Schltr.	3	0
38.	D. sect. Grastidium sp.1	3	0
39.	sp.2	3	0
40.	D. sect. Ceratobium sp.3	1	0
41.	Diplocaulobium chrysotropis Schltr.	3	1
42	D. minjemense Schltr.	3	0
43.	Eria imitans Schltr.	2	0
44.	Eria ramuana Schltr.	2	0
45.	Eria cf. E. eriaeoides (F.M.Bail.), Rolfe	3	0
46.	E. cf. E. fitzalani F. Muell.	2	0
47.	E. cf. E. floribunda Ldl.	3	0
48.	Eria sp.1	2	0
49.	Ephemerantha comata (Bl.) P.F.Hunt	3	0
50.	E. rhipidoloba Schltr.	3	0
51.	Grammatophyllum papuanum .J.Sm.	3	2
52.	Hippeophyllum cf. H. micranthum Schltr.	2	0
53.	Liparis sp.1	3	2
54.	sp.2	2	0
55.	Luisia cf. L. beccarii Rchb.	3	2
56.	Oberonia sp.1	3	0
57.	sp.2	2	0
58.	sp.3	2	0
59.	Pomatocalpa marsupiale (Krzl) J.J.Sm.	3	2
60.	Robequetia mooreana (Rolfe) J.J.Sm.	3	2
61.	Sarcanthus quinquefidus (Ldl.) Schltr.	3	2
62.	Sarcochilus moorei (Rchb.f.) Schltr.	3	2
63.	S. chrysanthus Schltr.	3	0
64.	Taeniophyllum aureum Schltr.	3	0
65.	T. sp.2	3	3
66.	Trichoglottis sororia Schltr.	3	1
67.	Thrixspermum arachnites J J.Sm.	2	2
68.	Vanda hindsii Ldl.	3	2

TABLE 3 A.

Summary of Terrestrial Orchid Rankings in Table 1.

Rank	No. of species in Natural Stands:	Ranking in Plantation			
		0	1	2	3
3	19	5	1	2	11
2	11	6	2	2	3
1	8	4	4	0	0
Total	38	15	7	4	14

TABLE 3 B.

Summary of Epiphytic Orchid Rankings in Table 2.

Rank	No. of species in Natural Stands	Ranking in Plantation			
		0	1	2	3
3	43	32	2	8	1
2	23	21	1	1	0
1	2	2	0	0	0
TOTALS	68	55	3	9	1

Announcing
The ANOS Judging Course — April to September, 1978

Arrangements have been made to conduct a training course for judges of Australian Native Ochids. For this purpose, A.N.O.S. Council appointed a Committee under the Chairmanship of Mr. Lloyd Bradford and comprising Messrs. W.T. Upton, R. Lowe and M Corrigan. The co-operation of the Orchid Society of N.S.W. has been sought and it is hoped that the course will benefit from participation by members of the O.S.N.S.W. Judging Panel.

The following details of the course have been supplied by the Committee:

Subjects covered and Dates Planned.

1. 9th April, 1978.

Introduction to the Orchids of Australia

- (a) History.
- (b) Classification in Orchid Family.
- (c) Distribution.
- (d) Future.

2. 30th April, 1978.

Exotic Orchids.

- (a) Judging Standards.
- (b) How to judge them.

3. 21st May, 1978.

Australian Native Orchid Species.

- (a) Judging Standards.
- (b) How to judge them.
  - (i) Epiphytes.
  - (ii) Terrestrials.

4. 11th June, 1978.

Culture.

- (a) Its effect on exhibition and specimen plants.
- (b) Specific culture of Australian Native Orchids at Canberra Botanic Gardens.

5. 2nd July, 1978.

Hybridising in Australia.

- (a) Parents commonly used —
  - (i) Good and bad qualities.
  - (ii) Dendrobium.
  - (iii) Sarcochilus.
  - (iv) Other Genera.
- (b) Future.

6. 23rd July, 1978.

Australian Native Orchid Hybrid Standards.

- (a) Their development.
- (b) Their practical application.

7. 27th August, 1978.

(a) Consideration of Species and Hybrids for Awards.

(b) Revision of complete course.

8. 10th September, 1978.

Examination.

- (a) Oral.
- (b) Written.

Lecturers:
These will consist of the very best authorities in the field.

Location and Timetable:
The course will be held at a central location in Sydney. It is planned for Sunday mornings, but this may be altered when the location is finally determined. The dates shown above are fixed assuming Sunday is adopted. Each session will occupy four hours giving one hour to review of the preceding session and then a three hour lecture/discussion period.

Fees:
$18, payable in advance, or $3 per session.

Eligibility:
All members are welcome to participate, whether in full or in part only. Those taking the full course will take precedence over part-time participants for enrolment purposes.

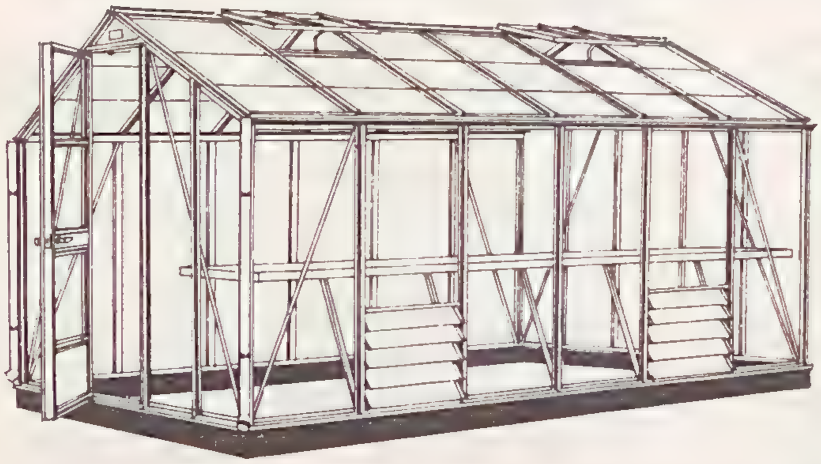
Examinations:
These will be conducted on the last date in calendar given above. Participants will judge plants at the 1978 A.N.O.S. Spring Festival Show.

Reading:
Book Lists appearing in the Orchadian issues of September and December 1977, are a guide.

The Australian Orchid Council's "Standards for Judging" will be required reading.

Nominations
for the course will close on 28th February, 1978. Please address all correspondence to the Secretary, A.N.O.S, P.O. Box C106, Clarence Street, Sydney, 2000.

An early expression of interest would be appreciated.



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Summer Cultural Notes

This is the time of the year when the dedicated orchid grower can really get peak enjoyment from his or her hobby, for if one has kept up a good programme, at the present time you may sit back and watch all those beautiful new canes growing that will supply the bulk of next year's flowering in most of our natives. One that is a very definite exception to this rule is *Dendrobium gracillimum,* which generally flowers strongest off canes that are at least one season old.

Now that December is with us, I hope that all your repotting has been carried out and your plants are all growing merrily. If you have any that still need doing, be fairly careful if you must do them now, as the risk of fungal infection is greatest in the hottest part of the year, and if the plant's need is not desperate, I would prefer to wait till the weather starts to cool a little.

With all the new growth that is on your plants, a constant eye must be kept open for damping off in these new growths, for if it gets a big hold on your plant, you can be back to taws in no time. In my part of the world, *Phytophthera* fungus seems to be the main culprit, especially in the native dendrobiums. If used regularly, the old ZINEB is still as good as any in my book; as prevention is still the best treatment. For anyone who fancies something a bit stronger, DITHANE 45 has a bit more punch. I'm one of those clots who does not believe in using anything 'atomic" if it can be avoided, as I much prefer to use something mild and often rather than have to use something atomic and erratic.

The same applies to insects and mites in the orchid house; MALATHION will give good control of most insects and KELTHANE will control most mites, if used methodically as the manufacturers suggest; and these are much less likely to kill you than some of the high flyers that are on the market today. There is no doubt that some of these are really potent; but what I am trying to get across is the fact that the average grower who is reasonably methodical, should be able to get by without having to resort to shotgun treatment.

Fertilizing should be in full swing now too, to make sure that you have achieved maximum growth before the season ends. Here again, moderation is the name of the game in my opinion. Plants are just like us; it's nice to be well fed, but it's also good to know when to say whoa !

The fungiciding that I mentioned earlier depends to a certain extent on what type of summer we get: if we have a dry summer, fungi will not be the problem that they will be if we get a wet one. While we can control the watering of our plants, there is not much danger; but be on the lookout if we head into a big wet.

Happy growing till next time.

— Ted Gregory.

Annual General Meeting of ANOS — President's Report

The past year has been a successful one. Financially we have gained ground, as you will see from the Treasurer's statement which is now presented in a form that enables members to see more clearly where we stand. Our Honorary Auditor believes that the value of the new form of presentation will be even more apparent in the next annual statement when the comparison between the two years will be more directly seen. I take this opportunity of expressing Council's apprecieation of the work done by the Hon. Treasurer, Mr. Phil Collin and the Hon. Auditor, Mr. D'Arcy Scott-Young.

Membership. Closely related to our finances is the membership strength. Here again, good progress has been made — with membership numbers increasing from 370 at the beginning of September, 1976, to 469 at 31st August, 1977, after removal from our membership record of 28 names of those who had been unfinancial for more than one year as at March, 1977. The net increase of 99 members is probably attributable to two factors: a modest campaign of advertising towards the end of 1976 and an improvement in the regularity of the publication of the Orchadian at quarterly intervals over the past two years. Further development of both these factors will be necessary.

New Groups have become well established in Wollongong, N.S.W. and in Adelaide; and your Council has maintained good contact with these and other groups.

The Orchadian is progressing well, as the Editor's report will show. This is largely due to an apparent restoration of confidence on the part of contributors of long standing and the introduction of new contributors. I do not wish to usurp the Editor s role in reporting to this Annual General Meeting. Much more on the Orchadian will be said by the Editor. But the Orchadian is of such vital importance to the role of the Central A.N.O.S. Council that it must receive mention in the President's Annual Report. There can be no doubt it must have top priority in Council's co-ordination role in relation to such a widespread national and international society. Our policy is, therefore, to improve the Orchadian even further in the next 12 months — both as a reliable scientific Journal (which is important to practising botanists) and as a vehicle to satisfy the needs of the great majority of enthusiastic members who are primarily concerned with the cultivation of our native species and hybrids.

Sales of Back Issues of the Orchadian, as the Treasurer's Statement shows, have become an important factor in financing further publication.

The Flasking Service, after some minor problems at the beginning, has become well established. Peter Vaughan has been instrumental in this.

A.N.O.S. Botanical Referee, Mr. Don Blaxell, has been of great assistance during the year, not only in his role as referee, but also as adviser on the future trend of the Orchadian. Members will be interested to learn that Mr. Blaxell was elected in February, 1977, as Chairman of the Research Group of the Australian Orchid Foundation, a body whose relationship with A N.O.S. will need to be clarified during the coming year.

Proposed Judging Course. Following numerous requests from Group members (particularly the A.N.O.S. Sydney Group) Council appointed a working Committee, comprising Mr. Walter Upton (convenor), and three members of Council, Messrs Lloyd Bradford, Murray Corrigan and Bob Lowe to undertake a feasibility study. The Committee's Report recommended the setting up of a comprehensive and ambitious course of training for judges specialising in Australasian Native Orchids. Council adopted the report and the President, together with Mr. Upton opened negotiations with the Orchid Society of N.S.W. during August particularly in regard to the possible co-operation and participation of that Society's Judging Committee. These are not yet completed, but A.N.O.S. plans to commence the course in April 1978. The feasibility of providing papers and reading lists to Groups outside N.S.W. will be considered in due course.

Ira Butler Memorial Trophies. Most members will know that the first of these trophies (for distinguished hybridising work) were presented to Messrs. Roger Bedford and Walter Upton. Details have been published in the September issue of the Orchadian. The annual trophy for the best hybrid has not yet been decided. I am hopeful that more details on the future of these trophies will be supplied to the meeting by one of the members of the Ira Butler Committee which comprises representatives of both Orchid Society of N.S.W. and A.N.O.S. Council.

Spring Shows. The third A.N.O.S. Annual Spring show will again be held in the Mona Vale Memorial Hall. There is evidence that it will repeat, or improve upon, the success of the 1976 show. Mr. Norm Hilliger will again be the Show Marshall, with Mr. Bob Lowe as Show Secretary. Council will provide judges for the forthcoming Spring Show of the Wollongong and District Native Orchid Society.

Attendance of Councillors at Monthly Meetings: This has been excellent again this year. Out of a total of 10 meetings following attendances were recorded (September 1976 to August 1977) — J.J. Betts (President), 9; K Edwards (Secretary), 10; M. Corrigan (Editor), 9; P. Collin (Treasurer), 6; L. Bradford (Vice President), 9; R. Lowe (Vice President), 9; E. Gordon (Immediate Past President), 8; P. Vaughan (Councillor), 8; G. Wells (Councillor), 7. All meetings were conducted at the Ryde School of Horticulture and we are indebted to that institution for its kindly co-operation in making their excellent facilities available to us. There may be some doubt about the statement that "Life was not meant to be easy", but I am prepared to make a more positive statement that life as President would have been impossible without the constantly reliable support of Council, especially Keith Edwards as Secretary and Phil Collin as Treasurer.

In Conslusion: I am gratified by the progress made in the last two years and express my thanks to all concerned — to the Director of the Botanic Gardens for accommodating us today; to Mr. Don Blaxell for his continuing assistance to us; to all Councillors and to our increasing number of members, especially those new members who have written appreciative and encouraging letters.

J.J. BETTS
President
3rd September, 1977

Statement of Funds for Year Ended 30/6/77

Opening balance	398.62		
Fixed deposit	1,500.00		
	1,898.62	1,898.62	
Receipts		3,528.28	
		5,426.90	
Payments		2,940.05	
Closing Balance		2,486.85	2,486.85
Comprising amounts			
held for Schlechter translation		100.00	
held in fixed deposit		1,500.00	
		1,600.00	1,600.00
Available for general business			886.85
			2,486.85

Treasurer's Statement of Receipts and Payments

Receipts		
	1976/77 $	1975/76 $
Membership, subscription		
arrears	127.79	143.00
current	1,349.91	1,013.00
advance	286.88	173.00
Bank interest	164.52	152.80
Sale of badges	94.20	68.00
Sale of Orchadians (back issues)	889.03	110.00
Sale of "Sarcanthinae"	10.00	12.00
Donations	219.56	129.05
Insert in Orchadian	40.00	—
Flasking service	38.00	—
Sale of ANOS flasks	65.40	—
Sundry sales	—	79.14
Profit Spring show	242.99	12.71
	3,528.28	1,892.70

Payments		
	1976/77 $	1975/76 $
Printing Orchadian	2,141.87	658.10
Printing miscellaneous	77.48	12.19
Purchase of Books	69.02	40.00
Advertising	35.36	—
Insurance	25.40	25.40
Maintenance typewriter	50.00	81.50
Book binding	72.00	106.95
G.P.O. Box	30.00	—
Affiliation fees	17.00	11.00
Bank charges	5.50	—
Flasking of seed	112.00	—
Miscellaneous expenses	304.42	608.98
Prizes	—	5.00
Purchase of badges	—	214.13
	2,940.05	1,763.25

(P. COLLIN)
Honorary Treasurer

I have examined the books and records of the Australasian Native Orchid Society and report that the above Statement of Receipts and Payments is in accordance with those books and records.

(D. SCOTT-YOUNG)
Honorary Auditor

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MARCH, 1978.

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Affiliates are generally devoted to exotic orchids but have a particularly strong interest in Australasian natives as well).

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Seed flasking made simpler.
Seasonal cultural notes.
Electronics in the glasshouse.

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THE ORCHADIAN

Founded August, 1963.

Editor: J. J. Betts
Honorary Associate Editors: Dr N.J. Grundon (Qld) Mr. J. Simmons (South Australia)

Volume 5, March 1978 No.11

EDITORIAL

Looking back at our December, 1977 number, I can say that I have learned much about the problems of editing. For example, one must be careful about predicting the contents of the next issue. In December I promised, for the March issue, a string of three articles on terrestrial orchids. It was to be a "terrestrial" issue so to speak; but what you have in this March number is nothing of the kind. This is not because those articles did not materialise. They are on hand and will appear later. The arrival, towards the end of December, of Dr. P.S. Lavarack's paper on "Recent Discoveries in North Queensland" caused me to give you a different issue, because I felt that these discoveries would be of more immediate interest to the generality of our readers. They are not, of course, "hot" news now; but earlier publications have appeared in journals of limited circulation.

Not the least of the pleasurers of attending the Ninth World Orchid Conference was the opportunity to meet and talk with Australian native orchid enthusiasts from other States — especially from Northern Territory and Tasmania — to say nothing of those from England and U.S.A. We noted that although the Australian exhibt was admired for the beauty and skillful arrangement of its display of *exotic* orchids, other countries such as South Africa, Madagascar, Papua New Guinea were able to devote displays exclusively to their native species. South Africa, for example, set up a small exhibit around a tree, consisting of just two cut flowers of the one species, *Disa uniflora.* Their brilliant colouring, and the fact that most of us had never before seen them, made this display a centre of attraction. January was, of course, a bad month for Australian natives. Perhaps we can do better next time. I believe the Tenth W.O.C. will be in September, 1981, and in South Africa.

From the "editorial" point of view one of the highlights of the Conference was meeting (and dining with) the Editor of the English *Orchid Review,* Brian Williams. This dispelled any thought I may have had that editing our quarterly journal is a heavy job; for Brian brings out a monthly *Orchid Review* full of excellent material arranged in an exemplary style — twelve times each year. Our dependence upon it is apparent, if only for its regular listing of new hybrid registrations by the R.H.S.

Feedback and Follow-up.

First the good news:

Reaction to the new *Orchadian* of December, 1977 has been very favourable. Your editor now openly admits his identity above, but more importantly, A.N.O.S. Council has appointed Associate Editors for Queensland and South Australia (see above). We hope there will be similar appointments from other States in due course. Issues for March and June will complete Volume 5; so there is room for experimenting before we finally settle the format and policies for Volum 6. The few minor (constructive) criticisms received have all been acted upon in this issue (see cover and page 175 which lists all A.N.O.S. Councillors along with "contacts" in the various States. They will all welcome your letters or your visits to Group meetings.)

The *Checklist of Australian Native Orchid Hybrids* has had a similar favourable reception and is much in demand. Copies are still available from the Secretary at $1.50 including postage.

Letters to the Editor is now established (page 171). Please keep those letters coming.

Now the other news:

Response to the Judging Course has been good but insufficient (at time of going to press) to ensure commencement in April. the venue will be the Ryde School of Horticulture — if enrolments are sufficient to justify the expense of bringing lecturers from outside the Sydney region. The Committee will write to all registrants soon.

There has been no response, to date, to our offer to sell our copy of R.D. FitzGerald's "Australian Orchids" (Part 2). Perhaps the rare book collectors are saving up for the complete facsimile reprint to be published in a limited number of copies later this year ? More on this in our next issue; meanwhile verbal feedback indicates that the offer should be renewed with an indication of A.N.O.S. Council's reserve price.

There has been no response to the suggestion that we might publish extracts from Rupp's letters.

Our editorial reference in December to the Australian Orchid Foundation's rejection of an A.N.O.S. proposal perhaps needs further explanation. We understand that the A.O.F. was bound by a policy decision to confine its support for research projects to those relating to Australian territory. For this reason, it was unable to support a project dealing with Papua New Guinea even though it may be indirectly relevant to Australia. We misinterpreted one of the resolutions made by the A.O.F.'s Research Committee in Canberra (February, 1977) which reads: "To invite applications for support or grants by any persons or group who have a desire to do specialised work on any subject that relates to the orchid species, whether they are endemic or otherwise."

Recent Discoveries in North Queensland

by Dr. P.S. Lavarack

The following article is largely a summary of two papers published in *Austrobaileya* and in the *Proceedings of the Royal Society of Queensland* (Lavarack 1975 and Lavarack 1977). As these journals are not readily available to the majority of the public who are interested in orchids, the author has, with the kind permission of the Editors of these two journals, prepared the following account. Original Latin descriptions have been omitted and some additional notes added.

The new discoveries described below were all made while carrying out field work for the National Parks and Wildlife Service of Queensland in North Queensland and on Cape York Peninsula. One was previously unrecorded in Queensland, five previously unrecorded in Australia and three were recently described as new species.

Didymoplexis pallens Griff., Calc. J. Nat. Hist. 4:383, t. 17 (1884); J. J. Sm., Orchid Java Fig. Atlas 1 f. 51 (1908); Dockr., Aust. Indig. Orchids 1:218 (1969)

See Figure 1. (Page 161)

Distribution:

Various localities between Ingham and Tully. Also Northern Territory, Indonesia, India and South East Asia.

This small saprophytic orchid has not previously been recorded from Queensland, although it has been collected in the Northern Territory and other locations from Indonesia to India. For some time a species of *Didymoplexis* has been known to occur in the coastal lowlands of the Cardwell area in Northern Queensland, but its identity remained unknown. This species showed little agreement with the figure in J. J. Smith's Figure Atlas of "Die Orchideen von Java" (copied by Dockrill in his "Australian Indigenous Orchids"). Recently some fluid-preserved material of the North Queensland species was sent to Mr. D. Blaxell (then Australian Botanical Liaison Officer at Kew) and he reported that the figures quoted above are misleading and that these specimens are a good match with the type drawing.

D. pallens is a small, delicate saprophyte which apparently flowers after the first soaking summer rains in December or January. It is a plant of the coastal Melaleuca-dominated forests and commonly occurs on small tussocks in areas which are otherwise swampy after heavy rain. It has been collected twice by the author in the area between Ingham and Tully in North Queensland, but possibly is a quite widespread plant in the humid tropics as it is very easily overlooked.

Each plant produces several flowers only one of which is open at any given time. The flowers are glistening white with a yellow-orange group of calli on the mid-line of the labellum.

Bulbophyllum masdevalliaceum Kranzlin, Bot. Jahrb. Syst. 34:251 (1904).

See Figure 2. (Page 161)

Distribution:

North East Cape York Peninsula, about 4 km west of Hunter Point, Moa Island and New Guinea.

A locally abundant epiphyte in vine forest where it commonly occurs on trees with a fibrous or papery bark — notably *Acmena hemilampra.*

Plant consisting of a creeping rhizome with pseudobulbs about 1 — 3 cm apart. Pseudobulbs 2 — 4 cm long and 0.5 — 1 cm in diameter, tapered towards the apex and strongly grooved. Leaves lanceolate 6 — 12 x 2 cm with a petiole about 2 — 3 cm long. Inflorescence erect 10 — 16 cm, single flowered. Lateral sepals connate at the base, 5 cm long and 1 cm at the widest, produced into filiform "tails" 3 cm long; red-purple with a cream-yellow margin. Dorsal sepal 3 x 5 cm shortly caudate, the margins densely ciliate. Petals 5 mm, falcate, apiculate. Labellum delicately hinged with smaller basal portion about 2 — 3 x 2 mm consisting of 2 short lateral lobes, purple in colour with a yellow throat; midlobe filiform 5 — 5 mm, yellow with a purple tip. Column erect 2 — 3 mm long and about 2 mm in diameter with 2 slender pointed stelidia projecting above the anther.

This species belongs to the section Sestochilus. It is easily separated from the other Australian member of this section *(B. baileyi)* by the elongate lateral sepals and very small petals. It has been recorded from New Guinea, but not previously from Australia as the area in which it occurs has only recently become accessible.

Recently I was given a small portion of a Bulbophyllum collected on Moa (Banks) Island in Torres Strait. The collector also provided a colour slide of the plant in flower and it is unmistakably *B. masdevalliaceum.*

B. masdevalliaceum Kranzlin is very similar to *B. blumei* (Lindl.) J. J. Smith var. *longicaudatum* J. J. Smith. Smith is of the opinion that *"B. masdevalliaceum* Kranzlin appears to me to be a large flowered form of the very variable *B. blumei"* (Smith 1911). However Schlechter disagrees with this stating "This plant (i.e *B. masdevalliaceum)* is definitely distinct and not, as J. J. Smith suggests, a large variety of *B. blumei* (Lindl.) J. J. Smith." (Schlechter 1928).

The Jardine River plants appear to agree well with the descriptions of both taxa. Mr. Don Blaxell of Sydney, while acting as Australian Botanical Liaison Officer at Kew compared a specimen of this plant with specimens of *B. masdevalliaceum* from New Guinea and the Solomon Islands and found them to be identical. For this reason and because of Schlechter's opinion quoted above, I have elected to place the Jardine River species in Kranzlin's *B. masdevalliaceum.*

Flowering time is uncertain, plants were collected in flower in August.

Plants introduced into cultivation in Atherton, Brisbane and Sydney have grown well when provided with a hot humid atmosphere; flowering has been during June — July in Atherton.

Bulbophyllum leratii (Schlechter) J. J. Smith, Bul. Jard. Bot. Buitenzorg Ser. 28:25 (1912).

Cirrhopetalum leratii Schlechter, Repert. Spec. No. Regni Veg. 9:216 (1911).

See Figure 3. (Page 162)

Distribution:

Cape York Peninsula, Tozer and Janet Ranges. Also New Caledonia.

A rather uncommon epiphyte growing in dense rainforest at an altitude of about 400 m.

Plant consisting of a creeping rhizome with pseudobulbs 5 — 10 mm apart, 12 — 18 mm long and 10 — 15 mm in diameter, with 4 or 5 prominent angles. Leaves erect, oblong shortly petiolate, 6 – 8 x 2 – 3.5 cm, rather thick. Inflorescence 15 – 25 cm long, umbellate with 6 – 10 flowers arranged in a circle. Lateral sepals purple-red, connate for the basal 5 mm, 16 – 22 mm long and 1.5 mm wide at the dilated base, the apices drawn out into long filiform tails. Dorsal sepal purple-red, consisting of an ovate cucullate basal 2.5 x 2 mm fringed with moderately long cilia, and an apical filiform appendage 2 mm long. Petals purple-red, 6 x 1 mm at the broadest, with a filiform apical appendage, and with moderately long cilia on basal half. Labellum white-cream, articulate on the column foot, recurved, fleshy, about 2 mm in length. Column 2 mm in length, with a prominent foot 2 mm long, stelidia present only as 2 short teeth near the apex.

The author is indebted to Dr. Gunnar Seidenfaden of Copenhagen, Denmark for assistance in the identification of this species. Dr. Seidenfaden, the author of a recent work on the Cirrhopetalum section of the genus *Bulbophyllum* (Seidenfaden 1973) writes in a letter to the author: "I have been somewhat doubtful about this taxon (i.e. *B. leratii*) of which I did not succeed in getting the type specimen or other material. I felt that he (i.e. Schlechter) might have a small specimen of *B. gracillimum* at hand. But clearly, the flowers you sent me have lateral sepals that are only half as long as what is usual for *B gracillimum* and it also seems from the picture that the leaves are relatively broader. So if these seem to be constant in the plants you now have living, I believe it would be reasonable to give Schlechter's plant specific status". Previously recorded from New Caledonia, this species appears to be limited in Australia to the Tozer and Janet Ranges, where it is by no means common. Vegetatively it is very similar to the other Australian member of the section Cirrhopetalum – *Bulbophyllum longiflorum* Thouars [(*B. clavigerum* (R.D. FitzG.) F. Muell.)], but may be distinguished when in flower by the much more slender lateral sepals.

Most plants seen were growing low down on the trunks of rainforest trees in deep shade, but a few plants, including one in full flower, were seen on a windswept ridge growing on rather stunted trees. It appears to flower quite freely, each pseudobulb producing several inflorescences.

Flowering time is uncertain. Plants were collected in flower in September, and have flowered in cultivation at various times from August to February.

In cultivation this species needs heat during winter in temperate climates and high humidity.

Taeniophyllum malianum Schlechter, Repert. Spec. Nov. Regni Veg. Beih. 1:1022 (1914) and fig., op. cit. t. 363 No. 1404 (1928).

See Figure 4. (Page 162)

Distribution:

Cape York Peninsula, McIlwraith Range, Tozer Range. Also New Guinea.

A locally abundant epiphyte in rather open rainforest from about sea level to about 500 m altitude.

Plant consisting of a short stem (10 – 20 mm), with the leaves reduced to small bracts which in time split to leave a covering of short stiff hairs; roots green, about 1.5 mm thick, somewhat flattened up to 20 cm long. Inflorescence 2 – 4 cm; peduncle long, glabrous; rachis short, glabrous with very small, deltoid, densely packed bracts. Up to 15 flowers opening singly, each borne on a very short pedicel. Sepals and petals similar, yellow, oblong, obtuse about 4.5 x 1 mm, the sepals slightly longer and broader than the petals. Labellum ovate, obtuse, indistinctly 3-lobed, 4 x 3 mm, yellow; spur 4.5 x 1.5 mm diameter at the widest, somewhat dilated at the distal end, almost in line with the midlobe. Column about 1 mm long with short acute stelidia. Anther with a prominent straplike rostrum about 0.8 mm long and sharply curved up. Pollinia 4, stipe about 1 mm, with a relatively large (about 1 mm) retinaculum.

This epiphyte of the low to moderate elevations of the McIlwraith Range usually grows low down on the tree trunks or on smaller branches, often forming a dense tangle of unattached or partly attached green roots. The flowers are yellow and usually no more than one per inflorescence opens at a given time. A large plant will produce 5 or 6 inflorescences.

T. malianum is quite similar to *T. flavum* Dockr. but may be distinguished by its generally much larger flowers and short, glabrous rachis.

Flowering appears to be spasmodic throughout the year with a possible emphasis on summer.

This species has now been observed in several locations in the McIlwraith Range and further north near the mouth of the Lockhart River where it occurs in coastal vine thickets.

Eulophia pulchra (Thouars) Lindl., Genera & Species Orchid. Plants 182 (1833)
Limodorum pulchrum Thouars, Orch. Iles Austr. Afr. tt. 43, 44 (1822).
Eulophia macrostachys Lindl. loc. cit. 183 (1833).
Eulophidium pulchrum (Thouars) Summerhayes, Bull. Bot. Jard. Bruxelles 27:400 (1957).

See Figure 5. (Page 164)

Distribution:

Cape York Peninsula, McIlwraith Range, Macrossan Range, Tozer Range. Also Madagascar, Ceylon, India, Malaya, Philippines,New Guinea, New Caledonia and Fiji.

An uncommon terrestrial orchid occurring on hillsides in the dense shade of closed forests at low altitudes.

Pseudobulbs to about 15 cm long and 2 cm diameter tapering upwards. Leaves 2, lanceolate; lamina to 30 cm long and 10 cm broad, with 3 prominent veins; petiole to 10 cm long. Inflorescence arising from near the base of the pseudobulb up to 80 cm tall, of which the rachis makes up about half. Flowers numerous (at least 15 in the specimens examined) not opening widely, predominantly green with a few small areas of brown markings. Dorsal and lateral sepals similar, lanceolate 10 –12 x 2.5 – 3 mm. Petals ovate 10 – 12 x 5 mm. Labellum, in the Australian specimens examined, similar to the petals, but slightly broader with a very shallow saccate base. (In overseas specimens the labellum is described as having a short spherical spur, a 3-lobed blade with the side lobes erect; midlobe much broader than long, broadly cleft, a divided callus at its base.) Column 5 mm long x 2 mm with no apparent column foot.

The plants from which this description was compiled were collected on the western slopes of the Macrossan Range in 1974 and subsequently flowered in cultivation. Two inflorescences have been examined and both had flowers anomalous in that the labellum was undivided and, in most regards, represented a third petal while there was no indication of the production of pollinia. I am indebted to Mr. Peter Taylor of Kew who confirmed my suspicions about the identity of this species saying: "I have examined your material and compared it with material of *Eulophia pulchra* (Thou.) Lindl. *(E. macrostachys)*, and in my opinion they belong to that species but are abnormal in having a slightly malformed column and third petal in lieu of a lip." (P. Taylor in litt.)

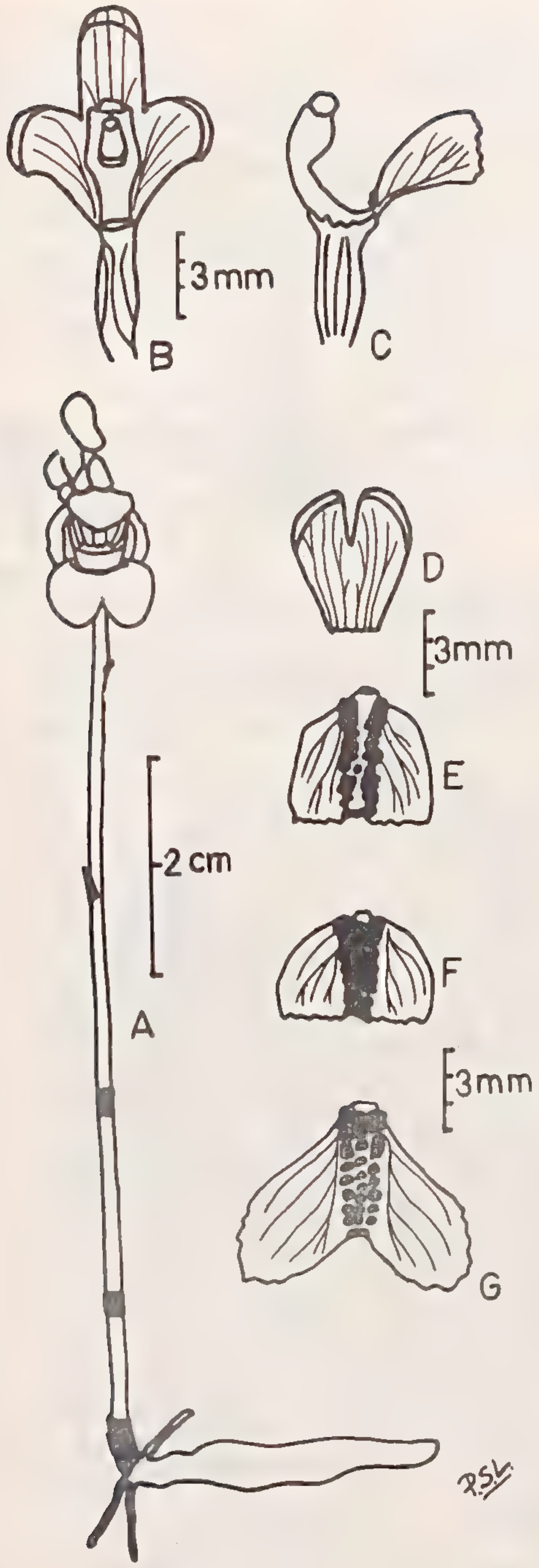

FIGURE 1.

Didymoplexis pallens Griff.

A: Plant. B: Flower from the front, labellum removed. C: Flower from the side, petals and sepals removed. D: Lateral sepals. E,F,G: Labella from 3 plants, flattened out.

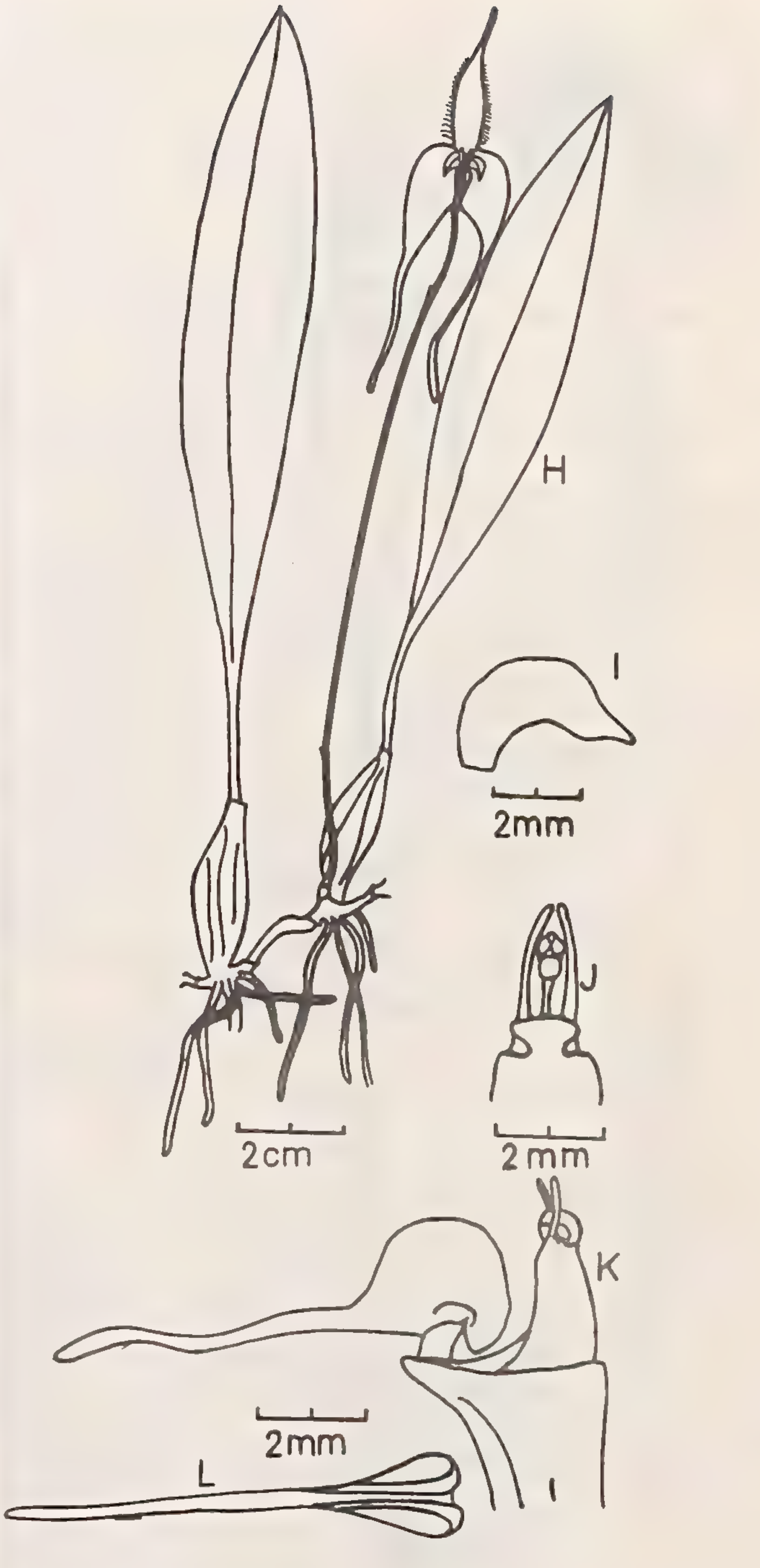

FIGURE 2.

Bulbophyllum masdevalliaceum Kranzlin

H: Portion of plant. I: Petal. J: Column from the front. K: Flower from the side, petals and sepals removed. L: Labellum from above.

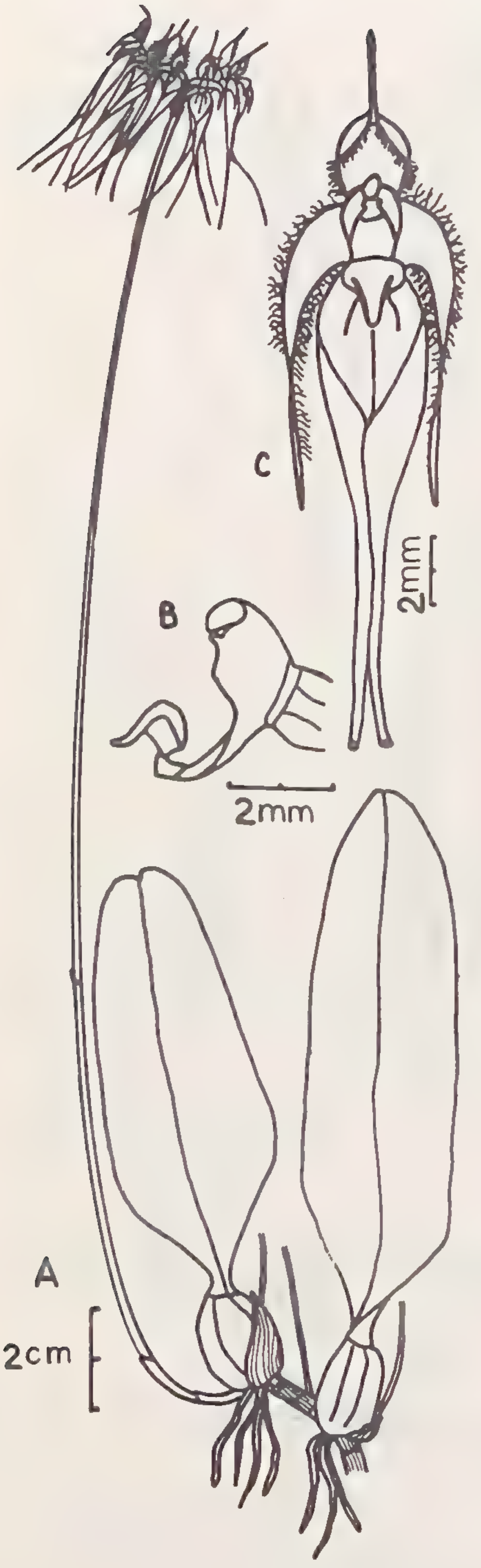

FIGURE 3.

Bulbophyllum leratii (Schlechter) J.J. Smith

A: Portion of plant. B: Flower from the side, petals and sepals removed. C: Flower from the front. (note: only half of lateral sepals shown).

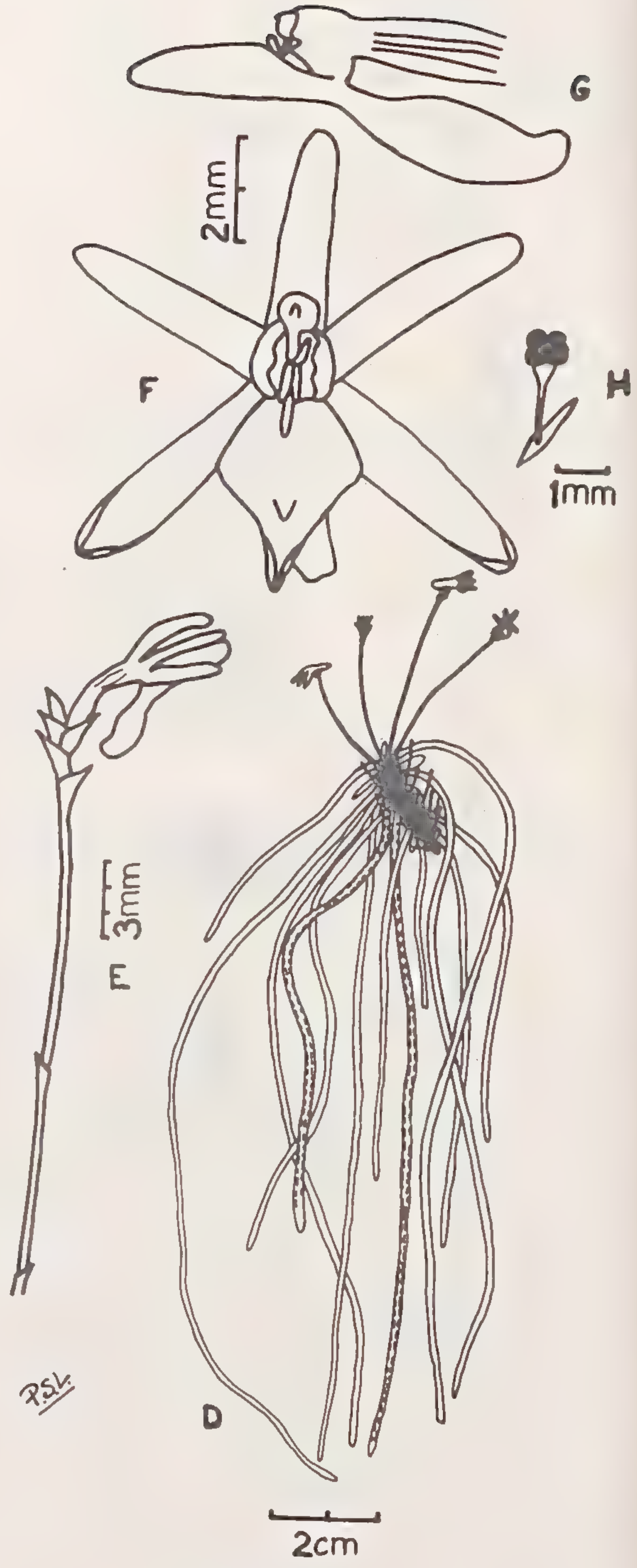

FIGURE 4.

Taeniophyllum malianum Schlechter

D: Plant. E: Inflorescence. F: Flower from the front. G: Flower from the side, petals and sepals removed. H: Pollinarium.

Whether all Australian plants of this species have these abnormalities remains to be proven. It was apparent that the flowers on the two inflorescences examined were self-pollinating. Flowering appears to be confined to the winter months, about May to July in Australia.

Since the original discovery of this species on the Macrossan Range the author has found it in several localities including the Janet and Tozer Ranges to the north and west of Iron Range. It is, in fact, a quite abundant terrestrial orchid and it is surprising that it has not been previously collected. It does well in cultivation in Brisbane, but must be kept dry during the winter months.

Schoenorchis sarcophylla Schlechter, Repert. Spec. Nov. Regni Veg. Beih, 1:1022 (1914) and fig., op. cit., t. 347, No. 1340 (1928).

See Figure 6. (Page 164)

Distribution.

Leo Creek, Cape York Peninsula. Also New Guinea.

A rare epiphytic orchid at least in the Australian part of its range. Collected only from the outermost branchlets of *Tristania exiliflora* overhanging the fast-flowing Leo Creek at an altitude of 400 m.

Stems 1 – 5 cm long about 0.25 cm wide, branched in larger specimens. Leaves linear, fleshy, channelled above, clasping the stem, up to 30 mm long and 4 mm wide. Inflorescence a sparsely branched panicle up to 5 cm long, with numerous very small flowers. Flowers white about 3 mm long. Dorsal sepal elliptical, obtuse, about 1.5 mm long and 1 mm wide; lateral sepals ovate about the same size as the dorsal sepal; petals smaller, oblong about 1 mm long and 0.75 mm wide. Labellum oblong 3 mm long, about 1 mm wide, with a well-developed spur about 0.8 mm long which is in line with the midlobe of the labellum. Lateral lobes small and not well defined, midlobe about 1 mm long. Column short and broad 0.8 mm long and 0.5 mm wide with a pair of minute sharply pointed stelidia immediately below the anther. Pollinia 4, ellipsoid, attached by a short stipe to the retinaculum.

This small epiphyte has previously been recorded from New Guinea. Its range in Australia appears to be restricted, as it has only been seen in the vicinity of Leo Creek in the McIlwraith Range. *S. sarcophylla* may be readily distinguished from the other Australian member of the genus (*S. densiflora* Schlechter) by the position of the spur, which in *S. sarcophylla* forms a straight line or a very wide angle with the mid-lobe of the labellum. In *S. densiflora* this angle is approximately 90°.

Flowering time is uncertain but plants have been collected in flower in August.

Dendrobium tozerensis P. Lavarack, Austrobaileya 1:64 – 74 (1977).

See Figure 7. (Page 165)

Distribution:

Tozer and Janet Ranges, Cape York Peninsula.

Plants epiphytic, growing into large clumps. Stems 20 – 60 x 0.1 – 0.2 cm, leafy in the upper half, the lower half covered with the remains of the sheathing bases of the leaves; internodes about 0.6 – 1.2 cm long; leaves numerous, linear-lanceolate, tapering gradually towards the apex, 3 – 8 x 0.4 – 0.8 cm, apex unequally bilobed, base sheathing. Flowers white in all parts, borne in pairs on a short peduncle of about 0.5 cm and a pedicel of about 0.5 cm from one to 3 pairs of flowers opening at any one time on any stem. Dorsal sepal, lateral sepals and petals all similar, narrowly triangular, tapering to an acute tip, about 15 x 2 mm, the lateral sepals slightly broader at the base. Labellum 8 –10 x 4 mm; lateral lobes broadly triangular but with a rounded apex 3 x 1 mm; midlobe narrowly triangular 5 x 1.2 mm with a crenulate margin and sparsely covered in short hairs; disc with a single longitudinal crest. Column short, about 5 x 2.5 mm; with a coloumn-foot about 4 mm long; stigma scutiform. Anther about 1 x 1 mm, about 0.5 mm high, rostrum not developed.

In all the specimens examined (about 15 plants collected from localities as much as 5 or 6 km apart) three anthers were present, the two lateral anthers being in all regards similar to the medium anther.

Vegetatively this plant closely resembles *D. baileyi* F. Muell. but may be separated from this when not in flower by the leaf tips which, in *D. tozerensis* are markedly unequally bilobed, while in *D. baileyi* they are only minutely so. Florally there are major differences in the shape of the segments. Flower colour is quite different, being pure white for the former, and yellow spotted with red or purple in the latter.

D. tozerensis has so far been collected only in the vicinity of Tozer's Gap where it is relatively common on the scattered trees growing on open rocky areas which occur in the midst of the rainforest. It occasionally grows on rocks. The flowering time appears to be during the summer in cultivation, but plants were collected in flower in September and it is possible it flowers spasmodically throughout the year. The flowers last for one day only before withering.

Oberonia carnosa P. Lavarack, Austrobaileya 1:64 – 74 (1977).

See Figure 8. (Page 165)

Distribution:

Tozer and Janet Ranges, Cape York Peninsula.

Plant epiphytic growing into small clumps. Leaves 4 – 6, 0.5 – 2.5 x 0.3 – 0.8 cm, ovate to deltoid usually tapering from the broad base to an acute or obtuse apex, fleshy and light green in colour. Inflorescence orange, 30 – 60 mm; the peduncle much shorter than the rachis with minute bracts arranged in whorls. Flowers numerous, minute about 1 mm long, also in irregular whorls; floral bracts about 0.8 mm long, ovary and pedicel about the same length. Sepals 0.6 x 0.5 mm, ovate, reflexed. Petals 0.8 x 0.6 mm, ovate, margins crenulate-erose. Labellum 1 x 0.7 mm, 3-lobed; lateral lobes 0.2 x 0.2 mm, trapeziform; midlobe 0.8 x 0.5, oblong, margin smooth to minutely crenulate, base saccate, apex obtuse or occasionally emarginate. Column 0.4 x 0.3 mm broadly winged below the anther. Anther 0.2 x 0.2 mm with a short but prominent rostrum. Pollinia 4, in 2 pairs, each pair elliptical.

The plant has been collected only from the rocky areas at Tozer's Gap which were previously described. It is strictly epiphytic often growing adjacent to *Dendrobium tozerensis.* A recent collection, apparently of *O. carnosa,* has been made in the Chester River area of the McIlwraith Range.

While it is generally similar to one or two New Guinea species, *O. carnosa* appears to be most closely related to *O. brachystachya* Lindl. from south east Asia.

Flowering time appears to be from about February to June.

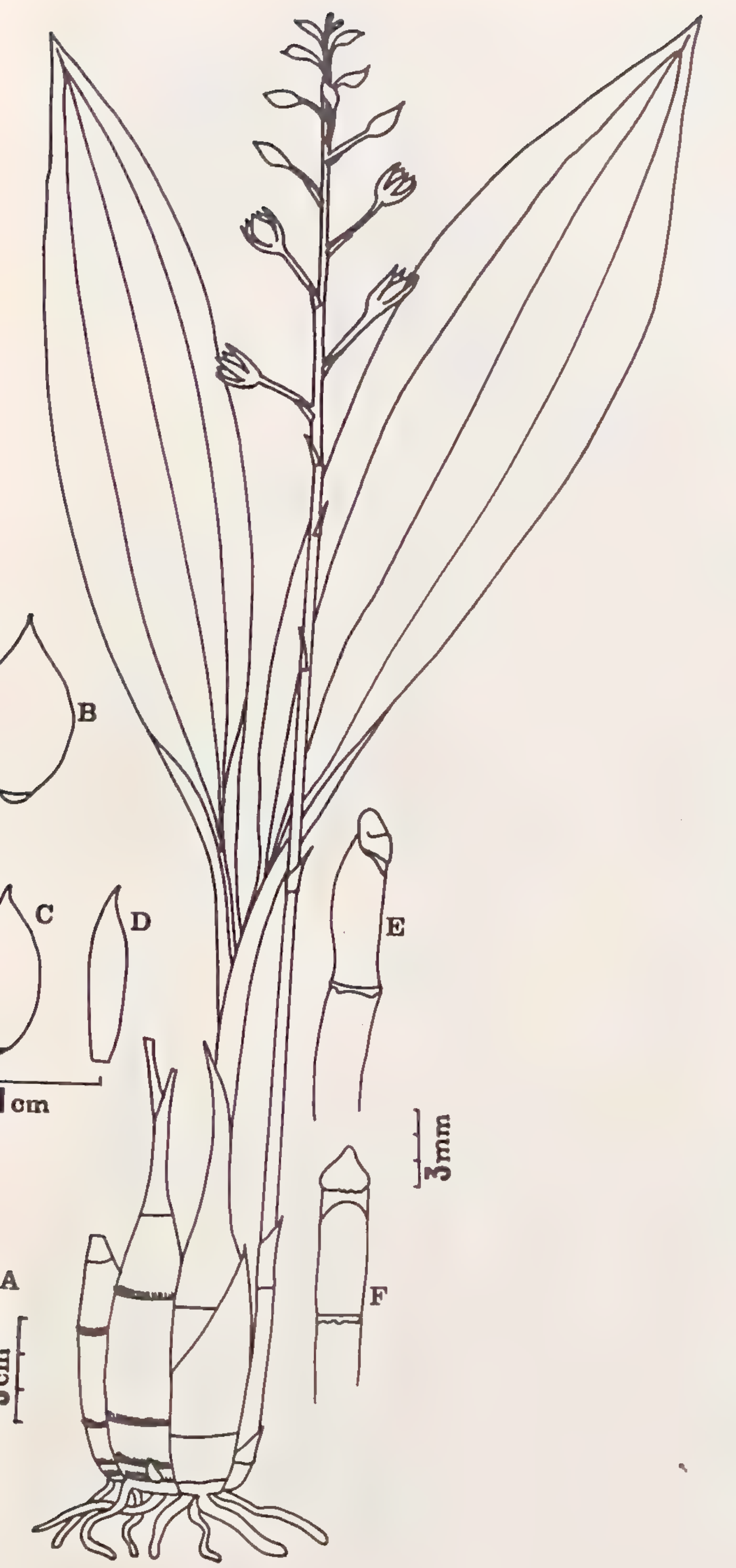

FIGURE 5.

Eulophia pulchra (Thouars) Lindl.

: Plant. B: Labellum. C: Petal. D: Sepal. E: Column rom the side. F: Column from the front.

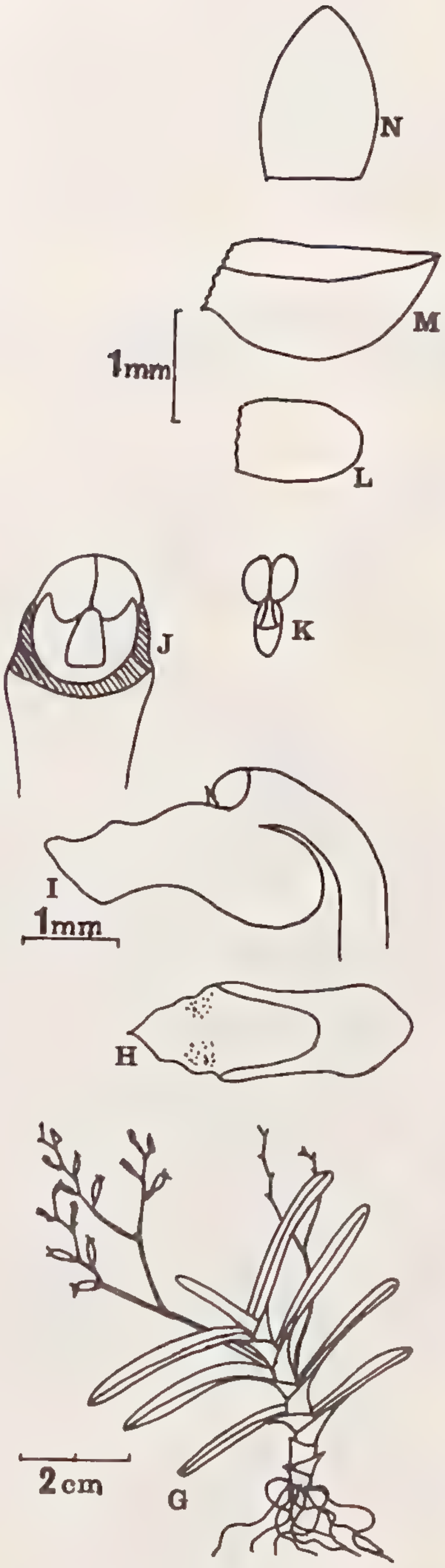

FIGURE 6.

Schoenorchis sarcophylla Schlechter

G: Plant. H: Labellum from above. I: Labellum and column from the side. J: Column from the front. K: Pollinia. L: Petal. M: Lateral sepal. N: Dorsal sepal.

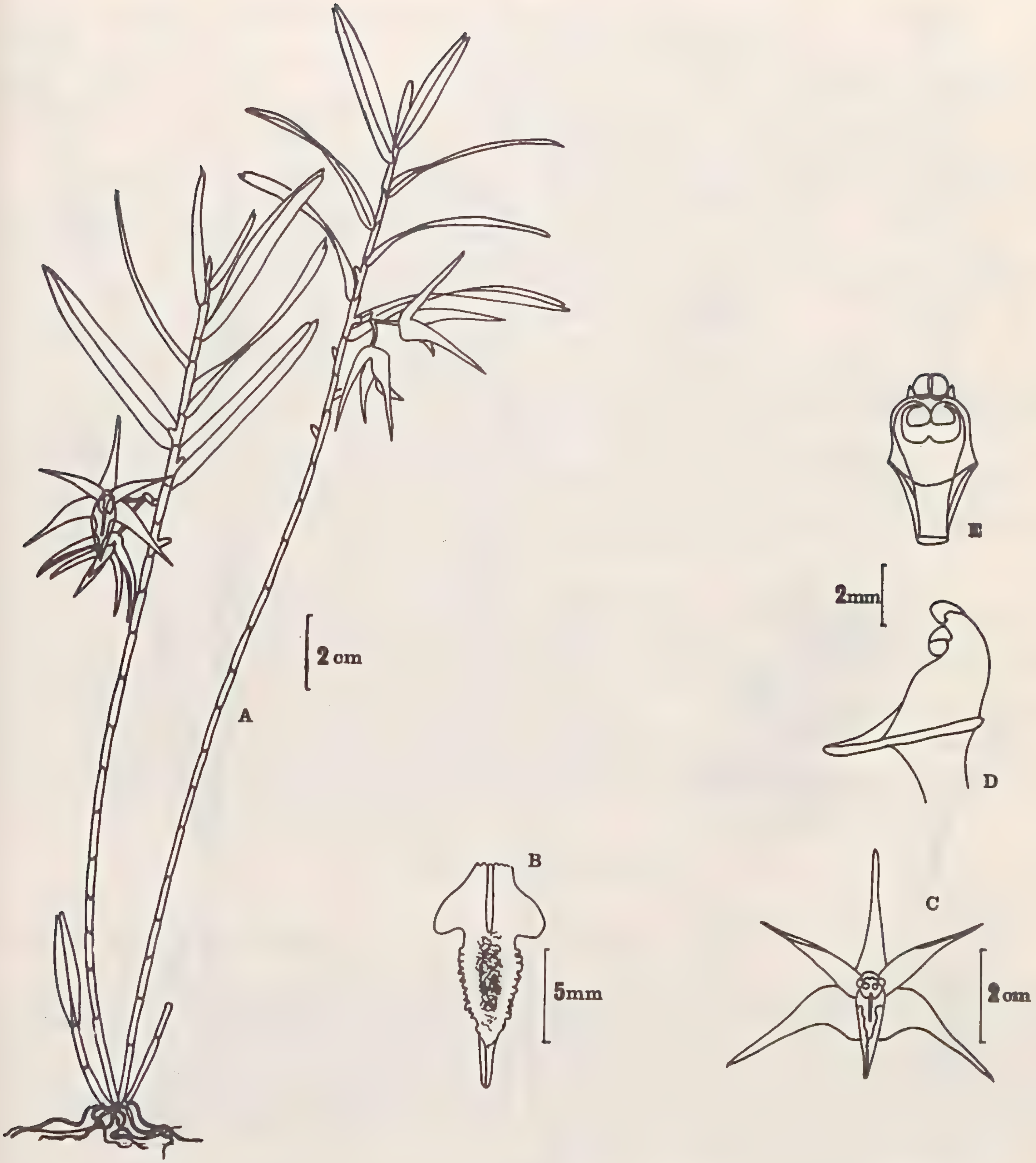

FIGURE 7.

Dendrobium tozerensis P. Lavarack

A: Plant. B: Labellum, flattened out. C: Flower from the front. D: Column from the side. E: Column from the front.

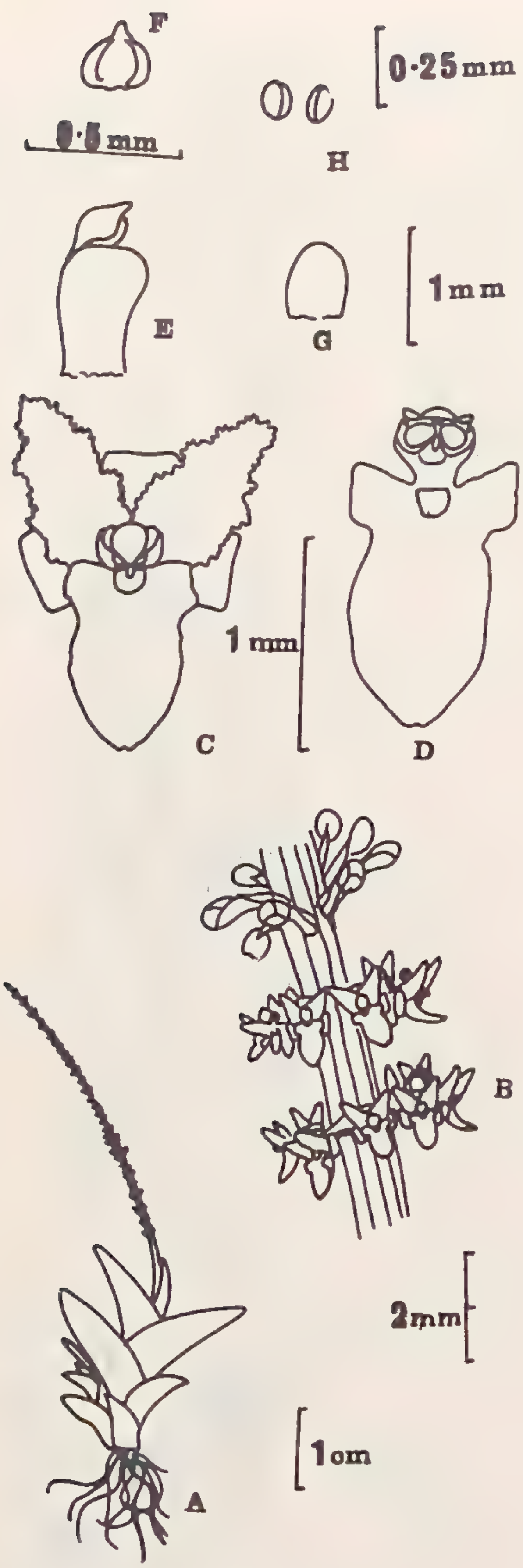

FIGURE 8.

Oberonia carnosa P. Lavarack

A: Plant. B: Portion of inflorescence. C: Flower from the front. D: Labellum and column from the front. E: Column from the side. F: Anther from above. G: Petal. H: Pollinia.

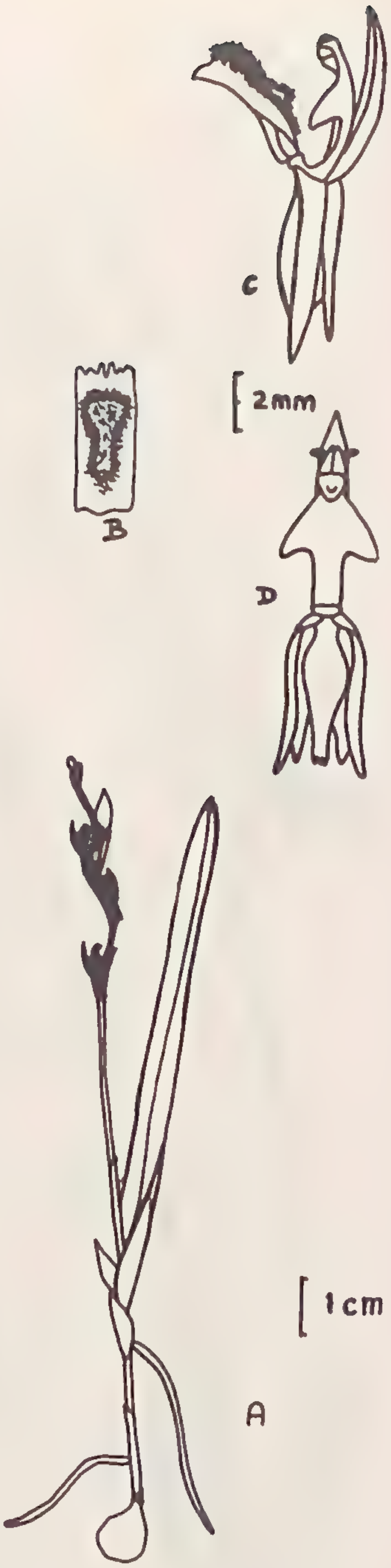

FIGURE 9.

Arthrochilus dockrillii P. Lavarack

A: Plant. B: Labellum flattened out. C: Flower from the side. D: Flower from the front, labellum removed.

Arthrochilus dockrillii P. Lavarack, Proc. Roy. Soc. Qd 86 (25):155 – 6 (1975).

See Figure 9. (Page 166)

Distribution:

Coastal tropical Queensland from about Innisfail to Cape York.

Plants terrestrial tuberous. Leaves, 1 – 2, radical, one usually greatly exceeding the other, but occasionally of equal size or one somewhat smaller. The large leaf (or leaves) thin, linear lanceolate up to 200 mm long and 5 – 10 mm broad, narrowed gradually to the base which encloses the peduncle. A bract usually present below the lower leaf. Inflorescence of few to 20 flowers, up to 200 mm usually exceeding the leaves in length. Flowers, widely spaced, lowermost about half way along the peduncle. Inflorescence bract, about half way between the lowest flower and leaf base, ovate lanceolate, sheathing, 5 – 7 mm long and 1 – 2 mm broad. Pedicels, slender, c. 1 – 2 mm long (excluding ovary). Floral bracts, similar in size and shape to the inflorescence bract. Ovary, 4 mm long. Dorsal sepal, oblong-spathulate, 6 mm long with incurved margins. Lateral sepals, sharply deflexed, linear, slightly falcate, 6 mm long, 1 mm broad, attached to the adaxial surface of the column 'foot' and decurrent on the column 'foot' to its point of attachment with the labellum. Petals, sharply deflexed narrow linear, slightly falcate, 4 – 5 mm long. Labellum, articulate on column 'foot' very shortly clawed, oblanceolate, tip of lamina with a V-shaped notch, lamina 5 mm long, 2 mm broad, upper surface of labellum with a prominent insectiform callus 1 mm high and 3 mm long. Callus, beset with hair-like processes 0.5 – 1.0 mm long, minutely hairy. (A few similar processes are present on the lamina near the claw.) Callus appendage, emarginate extending towards the claw. Column, curved, slightly shorter than the dorsal sepal, its base prolonged to form a column foot 2 mm long, flattened dorsiventrally and at right angles to the ovary. Column wings, or auricles in 2 pairs; the larger attached about halfway between the stigma and the ovary, obtuse, oblong, 2 mm long and 1 mm broad at the base; the smaller pair of auricles attached behind the anther, narrowly triangular, 0.5 mm long. Anther, terminal on the column. Stigma, below the anther, cup shaped, 0.5 – 1.0 diam. Pollinia not seen.

This species was found on each occasion at low altitudes on sandy soil in Melaleuca or Eucalyptus – Melaleuca dominated forests. It usually occurs in quite large numbers although only a few plants are usually seen in bloom at any one time. The flowering period is quite prolonged particularly for plants with a long inflorescence and may last more than a month. *Arthrochilus irritabilis* also occurs in areas in which *A. dockrillii* grows, but may be readily distinguished by its rosettes of leaves.

A. dockrillii appears to be intermediate between *A. byrnesii* and *A. irritabilis.*

This species was named in honour of Alick Dockrill of Atherton who, through his writings over a number of years, has done more than anyone else towards the taxonomy of North Queensland Orchidaceae.

ACKNOWLEDGEMENTS

The author is indebted to Mr. L. Pedley, Editor of *Austrobaileya* and to the Honorary Editor of the *Proceedings of the Royal Society of Queensland* for permission to use previously published figures and text.

I am also grateful to the following people for help with identification of several of the species: Mr. D.F. Blaxell, Mr. P. Taylor, Dr. L.A. Garay, Dr. G. Seidenfaden.

I also wish to express my appreciation to Mr. B. Gray and the Rev. R. Collins who ably assisted me in the field and, in some cases, made the initial discoveries.

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Taxonomic Notes – from England.

The *Orchid Review* from time to time publishes a commentary on "Recent Taxonomic Literature on Orchids" by P.J. Cribb of the Herbarium at Kew. This is valuable to us as it provides a brief round-up of significant articles affecting taxonomy from "technical" (scientific) and other journals, including the *Orchadian* where appropriate. Here are just two examples from the *Orchid Review,* October 1977, pp. 297 and 298, to show that Kew is both watchful and meticulous about what it accepts.

(1) "JONES, D.L. & NASH R.C. *A new Corybas from South Australia.* Muelleria, 3: 165 – 168 (1976).

A new species of Corybas, *C. despectans* from South Australia is described and illustrated. This species is allied to *C. diemenicus* (Lindl) Rupp & *C. dilatatus* (Rupp and Nicholls) Rupp, but has a smaller flower and a very short non-cucullate dorsal sepal."

(2) "ANON. New Orchid for Britain *(Ophrys bertolonii).* Nature, 263, Sept. 16 (1976). A single plant of the Mirror of Venus orchid *(O. bertolonii)* has been found in Dorset and is claimed as a new species for the British flora. *O. bertolonii* is a Mediterranean species with its closet localities in Southern France. The occurrence of only a single plant of this species in Dorset must be viewed with some scepticism. It would not be the first time a new record has been claimed for a planted specimen !"

Concerning the first extract: we apologise to our readers for our failure to report this species earlier. Concerning the second extract: though it refers to a European – not an Australasian – orchid, we feel it is perhaps not irrelevant to us. In lighter vein, we feel that it could not happen here – or could it ?

On *Cryptostylis* Pollination and Pseudocopulation

by B.J. Wallace

During mid morning of a day in the early summer of 1976-77, I was tending plants in a glasshouse in Armidale N.S.W., when I noticed an ichneumonid wasp fly in through an open panel just above a potted flowering plant of *Cryptostylis subulata* (Labill.) Reichb.f. Its flight and wing-beat were slower than of true wasps and its flight path meandered over about 1 — 1½ metres roughly centered on the *Cryptostylis* plant, giving the impression that it was following up an airborne "scent" concentration gradient. This gradient was apparently not sufficiently strong for direct tracing as the insect twice flew back out and in through the open panel by the same sort of oscillating path. After the second entry the width of the zig-zag decreased, now centred more precisely on the fully open flower, the insect appearing to be receiving a stronger stimulus. This shortening and quickening continued until the wasp was about 10 cm from the flower, when it flew directly to it, landed on the side of the labellum head towards the column, turned, backed under the labellum into the flower throat and thrust its arched abdomen towards the labellum base. In this position the upper surface of the insect's abdomen contacted the front of the column and would presumably have removed the pollinia (later observed with another individual, on the same plant) given the chance; it was captured at this point to enable positive identification.*

The actions following the final approach were effected with such speed and smooth efficiency as to suggest prior rehearsal, which may well have been the case as several of the preceding flowers of the raceme had set fruit. (The nearest known natural occurrence of *Cryptostylis* to Armidale is some 60 km away and nearer occurrences are improbable on ecological reasoning.) Even so, the insect's actions were probably largely innate responses to visual and tactile cues received from the appearance of the flower and feel of the labellum, from the time of the flower's entry into the insect's field of sharp, conscious vision. This was apparently from the 10 cm distance mentioned previously and the subsequent landing.

Thus, the flower plays on at least three different sensory faculties of the insect to bring it into the position whereby the pollinia would be collected. These three are "pheremone sense" — likened to something akin to both smell and touch —, sight, and touch itself. Van der Pijl and Dodson (1966) record that seminal fluid is deposited during this pseudocopulation and thus, one complete pollination cycle is effected by at least two cycles of appetitive and consummatory behaviour of the male *Lissopimpla* sex drive.

This rather complex interaction has apparently evolved wholly by adaptation of the flower, probably in a number of steps, taking advantage of the insect behaviour. Presumably the insect gains no real benefit from the relationship and thus there appears to be no specialisation developed by the insect in regard to it.

The product of the plant's adaptations is an efficient outcrossing type of pollination making for a situation of population genetics wherein there is maximum of character variation among individuals, a need of any species that is to survive and flourish in the constantly changing environment.

Specifically, these adaptations of the *Cryptostylis* flower include: (a) a flowering chronology timed such that the flower is fully functional when the male *Lissopimpla* also is. An important point here, and possibly one of the chance factors or "preadaptations" enabling the development of pseudocopulation pollination here, is the fact that the male wasps emerge from pupation some time prior to the females and their sex drive is primed, ready for triggering, thereby greatly increasing the possibility of exploitation by the flowers,
(b) the development of tissue that produces the volatile compounds, chemically identical to or sufficiently similar to the sex pheremone of the female *Lissopimpla* to effectively control the behaviour of the male insect,
(c) development of appropriate general flower form, position and orientation; such characteristics of many terrestrial orchids would lend themselves towards these needs,
(d) development of specific flower features of shape, colour and surface texture, of the labellum in particular, to impart the visual and tactile stimuli similar to those provided by the female wasp,
(e) arrangement of the floral parts such that the positioning adopted by the male wasp and its subsequent departure and repositioning in another flower, will result in pollinia removal from the first and deposition on the stigma of the second flower,
(f) sequential opening and activation of flower function to maximize out-crossing chances, i.e., if only one flower per plant is functional at any given time, pollinia must be taken **away** from each plant and most probably **to** another. Further to this point, there is evidence (Stoutamire, 1975) of a high degree of self sterility in various *Cryptostylis* species.

The probability of fortuitous, accidental, simultaneous acquisition of these characters is more or less zero. This indicates that they may have developed in sequence with the most important first and the "refinements" either evolving gradually afterwards or perhaps already possessed as "preadaptations", i.e. characters originally developed for other needs but useful in the new course after the change in adaptive direction. In this case, the most important and direction changing event would undoubtedly have been the acquisition of the ability to synthesise and release the wasp sex pheremone. Most orchids possess a similar faculty, i.e., perfume production — the synthesis by glandular tissue of one or (usually) a number of volatile aromatic chemical compounds and their release into the atmosphere. It is not inconceivable that mutation of a single gene could result in the production of the pheremone instead of the usual compounds. Research into the exact chemical nature of both pheremone and the mimic would shed light on this hypothesis.

Having achieved such control of the insect, it would remain for the more normal variation-producing genetic mechanisms and natural selection of the favourable combinations (relating for example, to such characters as mentioned in (b) to (f) above), to refine the pseudocopulation pollination process to its present state. Alternatively, the plant may have possessed some characters similar to these before the pheremone mutation, thus enhancing the effect of such a change.

The phenomenon of pseudocopulation was observed at least as long ago as the middle of last century (G.E. Smith, in Darwin, 1877) but was not recognised as such until early this century (Pouyanne, 1917; Godfery, 1925), the first Australian report coming in 1927 from Edith Coleman. An astute naturalist, she witnessed and described the pseudocopulatory pollination of *Cryptostylis leptochila* by *Lissopimpla semipunctata* in 1927 and 1928 and of *C. subulata* in the following year. In 1930

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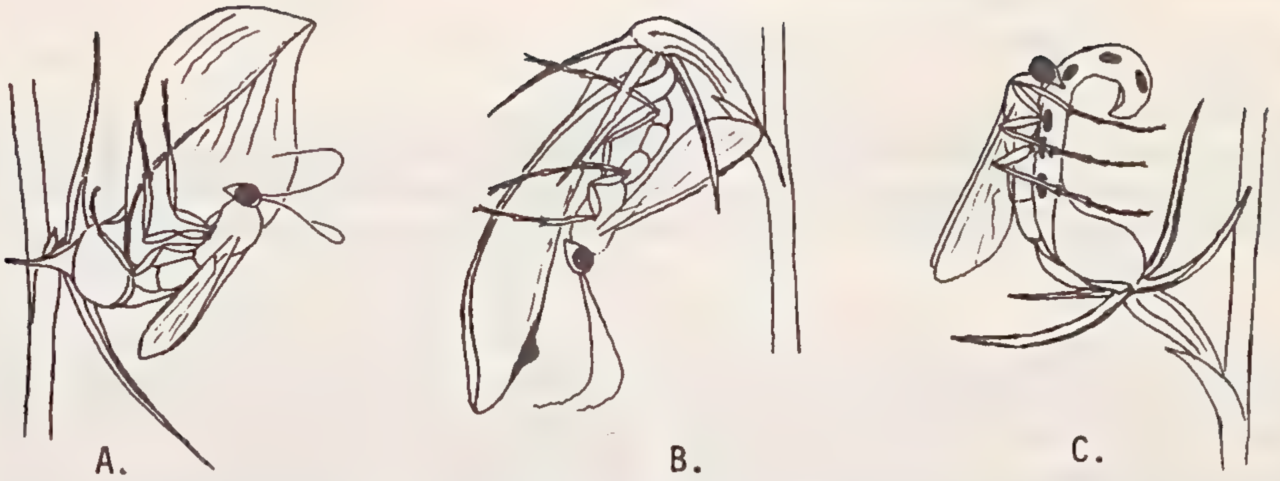
* Identified by Ms. J. Cardale at the Aust. Nat. Insect Collection, CSIRO, Canberra as *Lissopimpla excelsa* (Casta) (= *L. semipunctata).*



Lissopimpla excelsa pseudocopulating with A) *Cryptostylis erecta,* B) *C. subulata* and C) *C. leptochila.* It is interesting to note that there are three basically different flower orientations to which the insect adjusts its posture. A) & C) adapted from "Australian Insects". C.S.I.R.O and Coleman (1927) resp. ; all approx. life size

she also observed this in *C. erecta;* in this year Col. B.T. Goadby (Waston, 1961) witnessed it in the W.A. species *C. ovata* while eight years later, W.H. Nicholls said the same of his new species *C. hunteriana.* Thus, in all five Australian species, pollination is effected in the same manner by the same species of insect. This is an unusual case among orchids as most species (so far researched) within (and between) genera are prevented from hybridising by each having an exclusive pollinator.

Mrs. Coleman also made observations on the pollination of two species of *Diuris — D. pedunculata* and *D. aurea* by bees (Coleman, 1933a, 1933b). In both cases she believed that pseudocopulation was involved by reason of the insects' mode of behaviour at the flower and the fact that all insects captured (20+) were males.

In 1907, O.H. Sargent unwittingly observed pseudocupulatory pollination of *Caladenia barbarossae* by a black wasp, but it was not until 1974 that W.P. Stoutamire observed and recognised it; he researched pseudocopulation by various male wasps of the family thynnidae with various orchids. In his two papers (1974, 1975) he describes this in the genera *Chiloglottis, Caladenia* and *Drakaea.* At least one species of *Calochilus,* the tropical *C. holtzei* has been shown to be pollinated in this way (Jones and Gray, 1974) and my own research (paper in preparation) suggests the same may be true of some *Pterostylis* species.

Pseudocopulatory pollination is found in a few other important groups in at least two other geographical regions and it appears that all major occurrences evolved quite independently of one another; as follows: Firstly, the genus *Ophrys* (subfamily Orchidoideae) centred on the Mediterranean, consists of about 30 terrestrial species, most of which are apparently pollinated in pseudocopulation by male wasps of various genera and families. The previously mentioned observers, Pouyanne and Godfery, reported on these, but contemporary Scandinavian worker, Bertil Kullenberg, has done much research on this group, sometimes in collaboration with others (e.g. Kullenberg, 1950, 1961; Kullenberg and Bergstrom, 1975, 1976). In the case of *Ophrys* there is a spectrum of pollination methods — some species apparently have an exclusive pollinator, others two and yet others have a number. Mixed into this, at least one species, *O. insectifera,* may also be pollinated by pollen-feeding beetles and another, *O. apifera,* is capable of self pollination.

Secondly, in the tribe Vandeae, there are a number of genera in which pseudocopulatory pollination has been observed or is suspected. These are mostly detailed in van der Pijl and Dodson (1966). Except in the suspected case of the Oriental monotypic genus *Porphyroglottis* (subtribe Cymbidiinae), all of them occur in Central or South America. Of these, *Trigonidium* of the Maxillariinae is pollinated by pseudocopulation of the bee genus *Trigona;* the closely related *Mormolyca* and *Cyrtidium* have much more insect-like labella but pseudocopulation has not yet actually been confirmed in these.

A similar situation exists in the subtribe Oncidiinae (Ornithocephalus alliance) where this mode of pollination has been observed in *Trichoceros.* In the same group, *Stellilabium* and *Telipogon* also have insectiform labella and it is thus also suspected in these. Finally, Dodd (1976) reported pseudocopulatory pollination by the agency of a bee, in the West Indian species *Oncidium henekenii.*

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Dendrobium kingianum: A Plea for Selective Breeding

by Ted Gregory

Dendrobium kingianum is an orchid that has always held a great deal of interest for me. In fact at times I have thought of just having a collection of them and nothing else. But even if I did this, I doubt if I could ever do them justice, as their variety of form and habit would be beyond comprehension to anyone who has not become involved with these little beauties that survive on bare volcanic peaks, yet can grow and flower just as well in creek-beds just a few feet above sea level.

In my experience flowering time is genetically fixed in almost every clone, and that clone can be relied upon to flower at the same time each year, give or take a couple of weeks for seasonal fluctuation. By this, I mean that a *kingianum* that flowers in August will normally flower early and one that flowers October-November will remain late no matter where you grow it. The same thing goes for mid-season plants too: I have shifted them from 2,000 feet altitude to sea level and vice versa, and they will still flower somewhere near the naturally set time. I don't know if this feature has anything to do with their survival or evolution, but it certainly is a great feature for lengthening the flower season in the bush-house.

Another observation that I have made of the clones of Central and the North Coast of N.S.W. is that the later the flowering, the bigger the flower will be. This is only a generality, of course, but I have seen enough clones that support the theory to give it some substance. As I write this, (October, 1977), some of the better clones that I know are in their full glory and there are still a few to come. One of these will run to an inch and three-eighths when well grown, compared to the average flower which will run about five-eighths to three quarters of an inch.

Size of cane varies even more than size of flower, I believe, as I have seen plants with canes over two feet long and others down to *kingianum "var. pulcherrimum"* size where most of the canes are only about an inch long or a little better. This variation in growth habit varies from area to area; but over the centuries the clones have developed a fairly even habit in each locality. By this I mean that in one particular area short, stout canes are the norm, yet ten miles away slender canes will dominate. After the same fashion, some areas have clones of pendulous habit, yet other zones have very upright growth. Once I thought that cane length was controlled by the amount of sunlight the plant received, but since I have seen tall clones growing in full sun on bare rocks and dwarf canes in full shade, and vice versa, so the main controlling factor must be in the genetic makeup of the plant itself. Another generalisation is the fact that the further north one goes, the longer are the canes on *D. kingianum*. I am very much a self-taught layman, and I hope that these words will cause others to think on these lines and communicate with one another in the quest of knowledge.

One of the facets of *D. kingianum* where variations are most noticeable is in the colouration of the flowers. These may run from purest white to almost red, with every shade imaginable in between. The colouring seems to be like the variation in growth from area to area. In one zone most will be light pink and another zone will show dark pinks as the dominator, yet every zone has its white or deeper colour as well.

I have been involved in some breeding of *kingianums* in an effort to see if we can improve the species by selective breeding. I do think that by using selected parents a much better flower could be achieved in, say, four or five generations. One only has to look around and see things that man has set about improving to realize that wonders could be done with a bit of application to the job.

The first cross I had anything to do with was of two very good tall growing forms of *D. kingianum album.* In the progeny every plant had the tall growth habit, yet about eighty-five percent of the progeny were very ordinary pinks, so we gave this one away as a bad job. However, with the second cross we hit the jackpot. We crossed a big form of *D. kingianum "var. silcockii"* with a light pink of very good shape and, Lo and behold! All the babies are like the parents or a mixture of both. All are very even in growth and the flowers are much superior to the average *D. kingianum* that one may see in the bush. The thing is now to use the best of these seedlings again and see where we go from here. I have a batch of crosses away that are aimed at size of flower and shape mainly, so it will be interesting to see what we can see in a few years' time.

I have written this note in the hope that it will create interest in setting about improving our native orchid species. There has been much done in hybridising, but not much done in straight breeding to my knowledge. Please forgive me if I am wrong: I would love to see a programme drawn up and followed by a number of breeder-growers just to see what can be done with our orchids. We have seen so much done overseas that we have been inclined to follow along and overlook the inheritance that we have right beneath our very noses.

Editorial note: In this paper, Ted Gregory strikes a note which we hope will awaken kindred spirits. We hope they will respond by exchaning information through the pages of the Orchadian. Programmes to "improve the breed" take a long time, but as Ted says, success has been achieved with other plants; so it is probably only a matter of patience and perseverance. After seeing some of Ted's results to date we can confidently encourage others — particularly the younger growers — to take up the challenge. No doubt progress can be accelerated by the suggested exchanges of information. Let us have your ideas.

LETTERS to the EDITOR

Dear Sir, 6/1/78

I wish to comment on 'A checklist of Australian Native Orchid Hybrids which appeared in the December, 1977 issue of The Orchadian.

Firstly, congratulations on a job well done. I am sure the Checklist will be of benefit to all people interested in hybrids between Australia's native orchids and will be used widely. Such a list has been required for some time.

Secondly, I would like to place on record my role in the publication of the Checklist. I was surprised to see the number of words of praise given to me in the Introduction of the list; thank you for them but I believe these words belong more to the members of A.N.O.S. Council who persevered in the publication of the list. I produced a list similar to Section 1 of the present Checklist under pressure from Toowoomba members of A.N.O.S. A copy was sent to many other A.N.O.S. groups and the list was subsequently published in the Bulletin of the A.N.O.S. Victorian Group. A letter from Peter Vaughan arrived with the suggestion that my list be published in The Orchadian with a number of modifications which would have provided fuller information dealing with naturally occurring hybrids. I readily accepted Peter's offer which had been presented on behalf of the Council of A.N.O.S.

The resultant list is now available for all to use. I am very pleased to see the amount of information that has been included in Section 2 on naturally occurring hybrids. What a pity terrestrial hybrids could not be included. Could I encourage A.N.O.S. Council to try to get the experts on terrestrials to start assembling the information on these hybrids ?

4 Jean Street, Toowoomba, Qld. 4350. N.J. Grundon.

* * * * * * * *

Dear Sir

I am writing on behalf of A.N.O.S. Victoria (Terrestrial Orchid Study Group).

Your plant swapping idea is an excellent one and should go a long way toward expanding members' collections and, hopefully, reduce the drain on wild stock.

Our club would like to take part in your "Orchid Swap" as one of the objectives of our study group is to establish a cultural collection of Australian Terrestrial orchids for the purpose of study and conservation.

Phase one of this project is to establish a collection of all the *Pterostylis* species as we have found this genus one of the most successful to cultivate.

Below is a list of species which we now have available for swapping.

Pterostylis X *ingens,*
P. falcata,
P. truncata,
P. scabra var. *robusta,*
P. alata,
P. fischii,
P. coccinea,
P. revoluta,
P. aestiva,
P. ophioglossa,
P. decurva,
P. baptistii,
P. pedoglossa,
P. alpina.

Plants we require to complete our collection:

P. acuminata,
P. furcata,
P. ophioglossa var. *collina*
P. longicurva
P. X conoglossa,
P. furcillata,
P depauperata,
P. nutans var. *hispidula,*
P. pulchella,
P. angusta,
P. foliata,
P. scabra var. scabra
P. osiophila
P. allantoidea.
P. ceriflora

Hoping you can find room for our request in your next issue.

9 Rangeview Rd, Diamond Creek, Vic. 3089. R. Datodi.

* * * * * * * *

Dear Sir, 23/2/78

I would like to become a member of your organisation as I believe that the knowledge people have in regard to the cultivation of Native Orchids would be better used if combined through a central source.

I have, for example, been studying cultivation techniques of *Sarcochilus australis* over the last seven years and believe that the knowledge gained should be passed on, so enhancing the chance of complete survival of the species.

13 Mitchell St., Bentleigh, Vic. 3204. G.M. Robinson.

(We could not agree more. Your experience with *S. australis* is just what we are looking for. Please let me have your article as soon as you can. – Editor.)

* * * * * * * *

Dear Sir,

With interest I read your article on plant swapping and would love to participate. I am particularly interested in obtaining *Diuris punctata* plants (tubers). If you could print my request I would be very grateful indeed and could swap other terrestrials for them if anyone is interested.

15 Robin Tce, Hope Valley, S.A. 5090. G.T. Nieuwenhoven.

* * * * * * * *

Dear Sir,

I am writing in reply to your letter of 20.9.77. The seed that I sent in was from *Dendrobium teretifolium* crossed with *Dendrobium tetragonum* using *D. teretifolium* as the pod plant. As I am only a beginner with orchids I will pass over the purchase of flasks of *Dendrobium smillieae album* and *D. bairdianum,* the reason being that I have a few North Queensland native orchids that I have been trying to grow cold with very limited success. I have managed to flower *Dendrobium canaliculatum* (I am not sure why) but with *D. bigibbum* and *D. discolor* I have only managed to grow leaves. If at a later date you have any cool growing types, I am very interested.

With regard to the information that I requested, most of the questions I had have since been answered in the Orchadian, but I would like to know how many times the seedlings must be replanted before I get to see what has grown from my seeds. I ask this because I have no idea of the procedure for flasking of seed.

Also I am very interested in swapping plants (as in September Orchadian.) I have some *Sarcochilus falcatus, S. olivaceus* and *Dendrobium teretifolium* I would like to swap.

64 Sampson Cres., Bomaderry N.S.W. 2540. K. Brightwell.

(A number of articles have been published on seed-raising, but we intend to give you something new on this shortly – Editor.)

New Australian Native Orchid Hybrids

(Registered by the Royal Horticultural Society as listed in Orchid Review, September, 1977).

NAME	PARENTAGE	REGISTERED BY
DENDROBIUM		
Allyn Sands	Lowana Nioka x *johannis*	V. F. and N. C. Jupp
Our Native	*speciosum* x *johannis*	K. J. McFarlane
Star Imp	*tetragonum* x *adae*	V. F. and N. C. Jupp

COMMENTARY.

Noel Jupp has kindly given us the following comments. (We are hoping for similar notes from Kevin McFarlane).

"Dendrobium Allyn Sands . . . was made to extend the range of miniature *ceratobium* types and the *johannis* used was of the form to give us a free flowering hybrid. The results were extremely variable. Our best clone ("Riverdene") was an outstanding example producing tall, upright densely flowered spikes; sepals and petals sandy yellow with lighter coloured longitudinal veining; the labellum with a deep mauve blotch. Most of the clones we flowered at the nursery were free flowering; a few with very little colour in the labellum and some with quite dull flowers in comparison with our best clones. We have tried our best clone as a parent and can obtain a surprising amount of seed but very few have so far proved to be viable.

"Dendrobium Star Imp. To our knowledge this is the first *adae* cross registered (since Fetherston's D. Leonie Jane (= *D. adae* x *D. falcorostum*) in 1974 — Ed.) and certainly our first crossing and registration. The most important thing was that it laid a lot of our fears about using *D. adae* as a parent. We have word of a second grower flowering another cross, the results being quite good. We used a standard *D. tetragonum var. giganteum* on to a very nice white *D. adae.* Very little seed was obtained but proved to be highly fertile. Plants are compact; our first flowers were light apple green — star shaped with a spread of approximately 2½" — labellum a lovely rose pink with darker veining. In all a very desirable addition to our 'Star' range."

GROUP CONTRIBUTORS TO THE ORCHADIAN

Please note: closing dates for receipt of items of general interest are **early** February, May, August and November (first week if possible).

A CHECKLIST OF AUSTRALIAN NATIVE ORCHID HYBRIDS.

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A.N.O.S. GROUPS.

Reports from the **Wollongong and Districts Native Orchid Society** received in January, 1978 show this comparatively new Group is making great progress. Membership is increasing. Field trips are a particular attraction with this Group, located as it is near such interesting orchid territory as Robertson. Their First Show and Exhibition was held in September and the Judges, Murray Corrigan and Lloyd Bradford of A.N.O.S. Council were very favourably impressed.

Grand Champion Native Species Orchid went to Mr. L. Parker, while Grand Champion Native Hybrid went to Mr. R. Trevenar.

The Hon. Secretary wants Orchadian readers to know that the Society will purchase for its library *books or articles on native orchids* — that are no longer needed.

The Sydney Group's Bulletin for March — April reflects a lively programme for the coming months — including a field trip in early April to the Goulburn district. The new Editor, Jeremy Bruhl, is to be congratulated on his presentation of this much improved bulletin.

Native Orchid Society of S.A. Excellent communication has been established between N.O.S. S.A. and your Editor. The fruits of this will become apparent in the future. Meanwhile Jim Simmons, our Associate Editor for S.A. reports that a revised printing of Part 1 of J.M. Black's *Flora of South Australia* is expected to be published by the Government Printing Office in Adelaide early in 1978. It will incorporate a complete review of the Orchidaceae section by J. Weber and R. Bates.

(continued over)

A.N.O.S. GROUPS (continued)

The Victorian Group Bulletin continues to maintain its high standard. It is perhaps the biggest Group bulletin, is very readable and informative and popular with readers in other States, for its cultural notes. Helen Richards is the Editor. This Group is particularly vigorous in its study group activities. (See Rich Datodi's letter to the Editor in this issue). Their "Tuber Bank" organisation, run by Peter Brown is something well worth expanding. The Victorian Group of A.N.O.S. held its first meeting almost 10 years ago in August, 1968. Perhaps we could have a commemorative review to mark the 10th Anniversary in our June or September issue of the Orchadian ? Meanwhile the parent body (A.N.O.S. Council) which was founded in 1963 in Sydney, is now reaping the benefit, in new subscribers, from the favourable publicity given at page 9 of the Victorian Group's March, 1978 Bulletin. To quote: "There is more information on native orchids in the back copies of *The Orchadian* than in any book available."

W.A. Native Orchid Study Group (Inc). This comparatively new Group (affiliated with A.N.O.S.) has reported its first big success in conservation. At its December meeting, Mr. Alex S. George announced that the Group's representations to the W.A. Government, supported by the Albany Wildflower Society, have resulted in an area at Baker's Junction being declared an "A" Class Reserve.

Their next move concerns the protection of an area where *Caladenia cristata* occurs. This species has not been sighted in any other area for the past forty years. We wish them every success in their approach to the Australian Orchid Foundation and the Government of W.A.

The Native Orchid Society of Queensland publishes The Native Orchid Bulletin, edited by Dr. P. Lavarack. For some time we have had our eye on the statement on their front page each month: "Material from this bulletin may be reproduced provided acknowledgement is given to source and author." The November and December issues, although running to only four pages, contain articles we cannot resist passing on to readers of the Orchadian as soon as we can. These are on *Dendrobium stuartii* and on "Orchid Conservation — A Matter of Conscience ?" — both by Dr. Lavarack himself.

Bulbophyllum crassulifolium & B. aurantiacum

For a Genetic Research Project at Macquarie University, specimens of these two plants — with new leads and 2 — 3 leaves are required.

Collection locality is most important, but approximate area will do. Queensland and Southern N.S.W. are most relevant.

Please send to:
Mr. Rayden Rivett,
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Autumn Cultural Notes

I guess I am not alone in the fact that I am always a little sad as the days begin to draw in and winter approaches. This is an old dairyman's complaint relating to the fact that not many farmers relished working in the dark if they could help it. In this age of automation and short hours I sometimes think back to my youth in the great depression when we used to begin milking the cows by hand at 3—4 a.m. This was not too bad in the summer but it sure was a bit of a drag in the winter.

As a sidelight to the above reminiscence: I'd hate to think of the number of native orchids that have been destroyed wantonly or needlessly since then. In many ways Autumn is a most rewarding time for the native grower; if his plants have been tended well over the past few months they will be looking a picture now, and with a little bit of imagination one can see all the flowers on those new growths next spring. Last autumn in this part of the world was one of the wettest in history and I hope that Mother Nature has a bit more pity to spend on us this coming season. If your plants are in a well-drained mixture they can tolerate the wet but, given a wet season, the slugs and snails multiply! 'Baysol' (R) or 'Defender' (R) pellets scattered about will help to keep these devils in check. This treatment backed up by a torchlight inspection once or twice a week should keep them at bay. A major factor in controlling these pests is having a bushhouse with clean surrounds and neighbours who will help to keep these pests under control, as one can face an uphill battle if they are allowed to breed uncontrolled next door.

By this time of the year most insects and assorted chewers are starting to slow down, but I would still spray every two or three weeks to be on the safe side, as once a cane is lost, so are the blooms it would produce next spring. Unless you are using ingredients that are very incompatible you can mix fertilizer, fungicide and insecticide together and save on the elbow grease. Almost every preparation on the market these days has directions which tell what it is compatible with.

Once the weather starts to get really cool, the fertilizing of the Australian *Dendrobiums* can taper off, but the genus *Sarcochilus* enjoys being fed all the year round. I guess they lack the storage capacity of the *Dendrobiums* and so they appreciate that little bit of a boost even in the cold weather.

If the Autumn sets in warm, an eye must be kept out for red spider infestations. These seem to hang on and chew a lot longer these days. They have never been a serious pest on my natives as they are generally much too busy chewing up my cymbidiums in the next shade house. If you're in an area that doesn't have much of a red spider problem any of the ordinary miticides should get you out of trouble. Some of the growers around here who were getting a bit of resistance have had excellent results with 'Morestan' (R). This has a fairly good fungicidal effect as well. If you grow ferns, make sure you keep this one off them, otherwise you'll have instant defoliation. Here I am referring mainly to maiden hair types. I guess the more robust types of ferns would have more tolerance.

As the weather cools off one can also reduce the watering programme, as very few of our natives enjoy being cold and wet at the same time. If you live in an area that gets much frost, it is a great help if you can control the watering in the winter. Plants can take a lot of cold if they can be kept a bit on the dry side, but if they are wet big frosts can knock them about.

The summer just gone has been one of the best for growth that I have known. Here's hoping the Autumn will be just as fair.

Ted Gregory.

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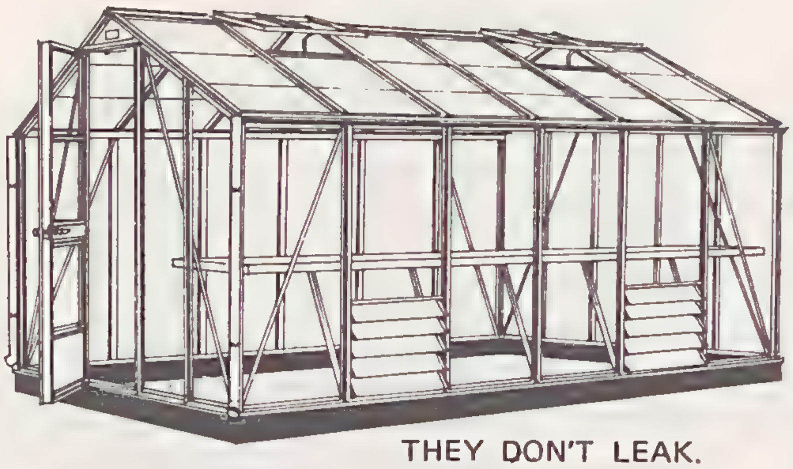

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Books

KANGAROO ISLAND ORCHIDS — by Ida Jackson.

Published 1976 by Islander Newspapers, South Australia. (Our copy from the Native Orchid Society of South Australia).

This is a slim paper-back of 28 pages obviously intended as a field guide.

The orchids found on Kangaroo Island are an interesting group with *Thelymitra matthewsii* making one of its unexpected appearances and *Caladenia bicalliata* (regarded as the smallest of the spider *Caladenias*) also being found. Almost 50 orchids are described in a form that is valuable as a field guide. The notes give a very brief description of any differentiating points, time of flowering and quite accurate locality spots. Using all these points a plant can usually be narrowed down to the species, but of course there will be some problems. Diagrams are used to illustrate most species but these are rarely able to give more detail than is sufficient to portray the genus. After allowing for amateur drawing skill, it is still reasonable to expect clearer diagrams than those presented.

Two obvious errors are *Pterostylis nutans* which has a diagram and text better fitting *P. concinna,* and the diagram of *Eriochilus cucullatus* may be pinned on virtually anything.

Summing up, the book is a valuable field guide, but if more time had been spent on the drawings, the book would have been twice as valuable. At its modest price of only a few dollars, it is still good value for those intending to visit Kangaroo Island. We believe N.O.S. S.A. is fortunate in having Ida Jackson as a member of that Society.

— Peter Vaughan.

ORCHIDS OF PAPUA NEW GUINEA, an introduction by Andreé Millar.

Price $9.95.

We have advance notice of this book from Miss Doris Eddey, 30 Kardinia Road, Glen Iris 3146, Victoria (Phone 25 2892); but publication is not expected for another two months. All we have is the dust jacket — from which it appears that it will not be a botanical work but "the first attempt to produce a pictorial and geographical record of some of the orchids of Papua New Guinea . . . It contains over two hundred photographs by Roy and Margaret Mackay."

In due course, when we have seen the book itself, we may present a review.

— Editor.

Rupp to Fordham — on *Corybas.*

9.6. 1942.

In this letter Rupp begins humorously by referring to the need to change Fordham's name. He had earlier named *Corysanthes fordhamii* after his friend. The letter goes on . . .

" . . . Robert Brown's name *Corysanthes* has to go, and has to be replaced by Salisbury's *Corybas.* This will end a long controbersy. Salisbury was a contemporary of Brown's, who somehow, "surrepitiously" according to Bentham, got hold of a faulty drawing of Bauer's representing what we have known as *Corysanthes bicalcarata* R. Br., he published this with a description of a new genus, *Corybas,* and called it *C. aconitiflorus.* Later, Brown published *Corysanthes* in his *Prodromus,* with some caustic comments on Salisbury's *C. aconitiflorus.* Some botanists, notably Reichenbach, held that since Salisbury had actually published *Corybas,* it must stand. Bentham, on the other hand, refused very bluntly to recongnise it, and in his *Flora Australiensis* he gives his reasons in no uncertain language. Most English and all Australian botanists have up to now supported Bentham and retained *Corysanthes.* American and European botanists turned it down and substituted *Corybas* . . . J. M. Black, author of *The Flora of South Australia,* who is bringing out a new edition and wants me to help him with the orchids . . . tells me that the International Council for Nomenclature considered every aspect of the *Corysanthes — Corybas* question and definitely turned down the request that the former should be a *nomen retendum* (i.e., a name to be retained — Ed.) Therefore we must either accept this decision or become a law unto ourselves, and the latter won't do. . . . So you will be in future *Corybas Fordhamii,* not *Corysanthes.* From a practical point of view Salisbury's nomenclature is better than Brown's. Not only is *Corybas* a shorter word with the same meaning, but it avoids the confusion which has often resulted by printers mixing up *Corysanthes* with *Coryanthes,* the latter a South American orchid genus widely separated from ours."

Who's Who.

THE AUSTRALASIAN NATIVE ORCHID SOCIETY OFFICERS AND GROUP CONTACTS.

A.N.O.S. Councillors:

Eric G. Gordon, (Immediate Past President). L. Bradford and R. Lowe (Vice Presidents). M.J. Corrigan, P. Vaughan, G. Wells, P. Weston.
For executive officers see front cover.

A.N.O.S. Group Officers and Affiliated Societies.

NEW SOUTH WALES

- *Sydney Group:* President: J. Walker (Tel. 419 2529)
  Meets 8 p.m. 2nd Friday each month, 39 Lower Fort Street, Miller's Point.
- *Warringah Group:* President: N. Hilliger (Tel. 99 2468)
  Meets 8 p.m. 2nd Thursday, Stony Range Flora Reserve, Pittwater Road, Dee Why.
- *Newcastle Group:* President: W. Murdoch, 30 Robey Road, Coal Point. 2283.
  Meets 4th Wednesday, John Young Community Hall, Thomas Street, Cardiff.
- *Wollongong and District:* Secretary: Mrs. Y. Parkinson, 23 James Road, Corrimal, 2518.
- *Blue Mountains and District Orchid Society (Affiliated):* President: D. Wallace (Tel. 39 2091), Secretary, K. Edwards (Tel. 21 8126)
  Meets 8 p.m. 4th Friday, Red Cross Hall, Springwood.

VICTORIAN GROUP:

- Secretary: Mrs. R. Wootton, (Tel. 754 6585)
  Meets 8 p.m. 1st Friday, the National Herbarium, Royal Botanic Gardens, Melbourne.

QUEENSLAND:

- *Darling Downs Group:* Secretary: Dr. N. Grundon (Tel. 35 2570)
  Meets 7.30 p.m. 3rd Friday, Adult Education Centre, City Hall, Ruthven Street, Toowoomba.
- *Native Orchid Society of Queensland (Affiliated):* President: R. Unsworth. Secretary: J. Warner, C/o G.P.O. Box 1358 Brisbane, Queensland 4001.
  Meets 8 p.m. 1st Monday at Bread House, 49 Gregory Terrace, Brisbane.

SOUTH AUSTRALIA:

- *Native Orchid Society of South Australia:* Secretary: E.R. Hargreaves, (Tel. 293 2471 or 297 3724)
  Meets 4th Tuesday, Goodwood Boys' High School, Hardy Street, Goodwood, Adelaide.

WESTERN AUSTRALIA:

- *Native Orchid Study Group (Inc.). (Affiliated):* Secretary: Ms. L. Penny, Unit 6, 63 Fourth Avenue, Mt. Lawley, W.A. 6050.

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Officers of ANOS Council
President: J.J. Betts
Secretary: K. Edwards
Treasurer: P. Collin

Please address all correspondence on membership, change of address, announcements by Groups and Affiliates etc., to the Secretary at the above address.

On all editorial and advertising matters please write to: J.J. Betts, 33 Memorial Ave., St. Ives N.S.W. 2075.

Articles should be typed in duplicate preferably on A4 size paper; double spaced with 4 cm or more, lefthand margins.

ANOS annual membership is $5.00 which includes family membership and covers four issues of this journal.

Available from the Secretary at $2.00 each (overseas Aus. $2.50) are ANOS badges depicting the blue sun orchid *Thelymitra ixioides* (see above).

Local Groups of ANOS

- Sydney
- Warringah
- Newcastle
- Wollongong
- Hastings Valley
- Darling Downs (Qld.)
- Victoria
- South Australia

Affiliated Societies

- Native O.S. of Qld.
- Blue Mtns. & Districts O.S.
- Northern & Eastern Districts O.S. (S.A.)
- W.A. Native Orchid Study & Conservation Group (Inc.)
- Cumberland Orchid Circle (N.S.W.)
- Darwin O.S. of N.T.

In general Group meetings are concerned with native orchids exclusively.

Affiliates are generally devoted to exotic orchids but have a particularly strong interest in Australasian natives as well).

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Seed flasking made simpler.
Seasonal culture notes.

Back Issues of the Orchadian are available from the Secretary at (Aus.) $10 including postage) per volume of 12 issues (Vols. 1–4) and (Aus.) $1 (Plus postage) per copy of each issue of Vol.5. Supplies of Vol.1 are very limited.

Membership Renewal. Subscription renewal notices for the year July 1978 to June 1979 are enclosed with this issue. If you have sent your cheque within the past few weeks, please ignore the notice. Otherwise please remit to the Hon. Treasurer NOW to ensure you continue to receive the journal.

Overseas Subscribers: For both membership fees and back issues, please remit **by bank draft** the required amount in Australian dollars. Surface mail is used. Airmail extra.

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THE ORCHADIAN

Founded August, 1963.

Editor: J.J. Betts

Honorary Associate Editors: Dr. N.J. Grundon (Qld) Mr. J. Simmons (South Australia)

Volume 5, June 1978 No.12

EDITORIAL

"If Winter Comes" said Shelley, "can Spring be far behind?" We have all heard it said that, in a heated glasshouse, it is Spring all year round. Not true — to the grower of Australian native orchid species. To him Shelley's words are most significant. The shadehouse full of natives comes alive in August — September with colour and fragrance (the more so if Ted Gregory's seasonal notes have been followed).

For ANOS members in the Sydney area, the forthcoming Spring will be even more feverish in its activity than ever before. To the highlights of our year — the Fourth Annual Spring Show at Mona Vale (September) — the graduation of our first crop of judges — our participation in the judging of Group Shows and in the N.S.W. Regional Conference on the Blue Mountains (October) — our Annual General Meeting and election of a new ANOS Council (September), — to all of these things this year we shall add a special week-long display for the Twentieth International Horticultural Congress, (the first ever in the southern hemisphere) at Sydney University's Carslaw Building (14 August to 20 August). The Sydney and Warringah Groups are collaborating in this display and will need all the help they can get from those who expect early flowering of their native orchid specimens this August. There are no prizes — just the reputation of our native orchids internationally and the admiration of people who will be seeing them for the first time. Please contact Jim Walker or Lloyd Bradford of Sydney Group or Norm Hilliger of Warringah Group if you can help.

Feedback and Follow-up

The ANOS Judging Course enrolments have more than justified ANOS Council's decision to run this course. Commencement was deferred until this month but sessions will still conclude in September as originally planned. Meanwhile the Orchid Society of N.S.W. informed us on 18th April that its official Judging Classes (a 10 months course) will commence in June. Sydney Metropolitan Group members have been informed of the details.

"Letters to the Editor" are not flowing in the quantity expected. I am not referring to the many complimentary short notes and good wishes added to letters seeking back issues, paying dues and so on. I mean letters for publication. Personally I should not like to see letters written just for the sake of writing or for the purpose of performing a duty. It is generally pleasant to open up the latest issue of a journal you enjoy, turn the pages for a quick look at the contents then settle down to read at least the main articles of your choice — or perhaps even to read from cover to cover — and finally to review the general quality of the journal. Perhaps the particular issue falls short of expectations; perhaps it is of average quality; perhaps it excels itself. One puts it aside in any case and looks forward to the next issue. I do this with many journals and I admit it seldom occurs to me to write a letter to the editor about it. To write is seldom to relax ! So why write ? Life should be easy even if it seldom is. As an editor, I find myself taking a different — perhaps unreasonable — attitude. As editor I am deprived of the pleasures described above: opening, browsing, selecting, learning, forming an opinion of the quality of the contents and finally looking forward to the next one. I've read it already, having put it all together. How am I to form an unbiassed opinion of it ? By getting letters from you ! That's how !

In March, 1976, it was announced in the *Orchadian* that G. Hermon Slade had presented ANOS with a cheque for $100 to finance the commencement of translation from the German of Rudolf Schlechter's Inroduction to *Die Orchidaceen von Deutsch-Neu-Guinea.* This project has changed its character quite unexpectedly in the past six months — largely because of our enlisting Jim Simmons as Associate Editor for South Australia. At his suggestion it was agreed that a series of short biographical articles should be attempted on the great Australian botanists of the past. Jim Simmons and Roy Hargreaves began researching the life and work of Dr. R.S. Rogers in Adelaide. Among the material they supplied to me in Sydney was a list of documents bequeathed by Dr. Rogers to the University of Adelaide and in that list was a translation by Rogers of Schlechter's "The Orchids of German New Guinea" ! The University has kindly provided us with a copy of this translation for reasearch purposes only. I have had discussions with Hermon Slade and with Don Blaxell of the Sydney Herbarium and it has been agreed that before any further decisions are taken on this project it will be necessary to compare the German text (approximately 1,030 pages) with the translation to determine the extent of the work done by Dr. Rogers. This will take some time. Meanwhile one thing is certain: that this project is proving more fruitful than we, at first, expected. It would be premature to make any further comment, at present, other than to express our gratitude to Mr. Slade and to the University of Adelaide.

On the Status of *Thelymitra truncata*, Rogers

by D.K. McAlpine

Evidence is here presented indicating that the plant known as *Thelymitra truncata* Rogers (1917) or *T. ixioides* var. *truncata* (Rogers) Nicholls (1943) is a natural hybrid between *T. ixioides* Sw. and either *T. pauciflora* R. Br. or one of the very closely related forms (*T. aristata* Lindl. or *T. nuda* R. Br.). *Thelymitra ixioides* forma *merranae* (Nicholls) Nicholls (1943) is probably the result of backcrosses of the hybrids to *T. ixioides*.

On 5th November, 1977 in dry sclerophyll forest approximately 3km south east of Mount Wilson (Blue Mountains, New South Wales) I found among numerous plants of *Thelymitra ixioides* some *Thelymitra* plants which, while having spots on the lateral petals as in *T. ixioides*, possessed columns reminiscent of *T. pauciflora* (Cf. figures 1 & 2). Closer examination showed that these unusual flowers possessed the characters of *T. truncata* (See figure 3), and that plants with flowers intermediate between these and more typical specimens of *T. ixioides* (some apparently conforming to *T. ixioides* forma *merranae*) were present (See figure 4). Plants of *T. pauciflora* were plentiful a short distance down the slope in slightly heavier forest, most plants of the other forms mentioned being near the top of the ridge; but in places all grew in close proximity. Only one flower of *T. pauciflora* was seen to be open, for, as is usual with this form (or species?), the flowers are usually self-pollinating and open sparingly. However the fact that the flowers sometimes open widely presenting blue tepals suggests that the genotype is adapted to permit a limited amount of recombination by cross-pollination, particularly as rarely more than one flower of any plant is open at the one time.

Because plants of *T. truncata* are of restricted occurrence and because they are intermediate between *T. ixioides* and *T. pauciflora* in the population I observed, I now put forward the theory that *T. truncata* is a hybrid between the other two species. This theory is subject to confirmation by experimental breeding but I believe that it is the one which best fits the observed facts.

Those plants of *T. truncata* which are most dissimilar to *T. ixioides* have the column agreeing closely with the figures of *T. truncata* given by Nicholls (1951: pl. 7, Part 1 Orchids of Australia), but the papillae on the back of the midlobe are reduced to very low or indistinct tubercles; they all have spotting on at least some petals, the flowers are smaller and fewer than is usual in *T. ixioides*, and the hair-tufts of the column are turned upwards. They do not therefore cover all possible degrees of similarity to *T. pauciflora*, though some could readily be taken for that species but for this spotting and quite small differences in column structure. This situation could be expected if backcrosses to *T. pauciflora* are uncommon on account of the usual self-pollination of the latter. However some degree of variation beyond the mid-point is rendered possible by recombination resulting from inbreeding in F1 hybrids. The numerous stages connecting the apparent hybrids to *T. ixioides* are also to be expected as both are presumably quite capable of outbreeding. From my observations it appears that the main population of *T. ixioides* in the area studied is heavily introgressed with hybrid genes, but no sign of introgression was found in the main population of typical plants of *T. pauciflora*, examination of which was more cursory.

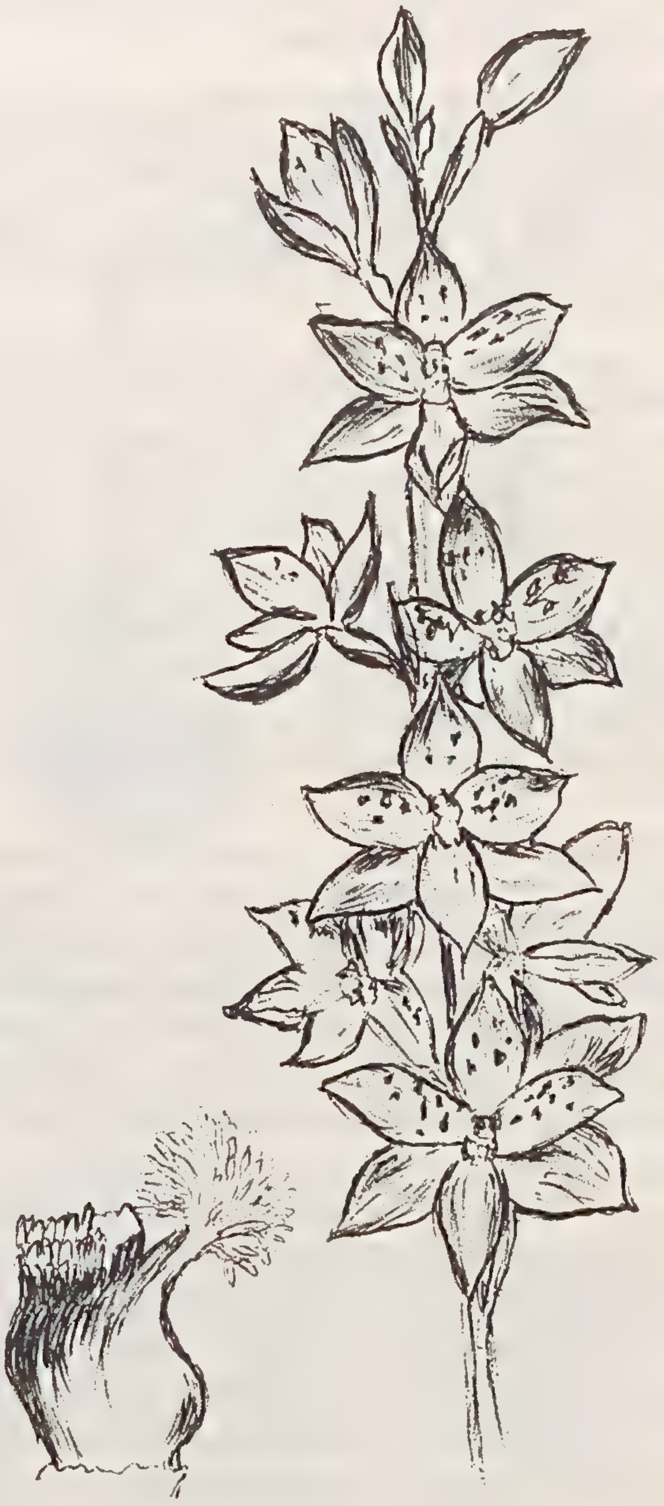

Fig. 1.
Thelymitra ixioides Swartz.
(Natural size) Column (enlarged) of a robust form from side, showing papillae and hair-tufts.
(From Nicholls, loc. cit. Part 1, Plate 4)

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Bowden (1962) records *T. truncata* from Woodford, Lawson, and Wentworth Falls (all in the Blue Mountains). *T. ixioides* is abundant in all these localities and *T. pauciflora* is also recorded or almost certainly present in all. Ingram and Whitehead (1970: Orchadian Vol.3 P136; 7) record *T. truncata* from Yetholme Trig., Mount Horrible, and Yetholme (all immediately to the west of the Great Dividing Range in the Central Tablelands District of New South Wales. They record *T. ixioides* also from the three localities and *T. pauciflora* from the first two only, but it may be significant that *T. aristata* is recorded for Yetholme. I have inadequate data for estimating proximity to the postulated parent species for populations of *T. truncata* outside New South Wales.

In accord with the observed characters of the hybrids it must be inferred that the gene (or genes) for spottedness derived from *T. ixioides* is dominant over the corresponding gene (or genes) for spotlessness from *T. pauciflora.* Also the gene (or genes) for the cross-pollinating tendency of *T. ixioides* is dominant over that (or those) inducing the self-pollinating tendency in *T. pauciflora.*

Nicholls (1943) while recognizing *forma merranae* as "intermediate" and "transitional, and not a fixed variety", recorded *T. truncata* as "more widely distributed (in some districts an abundant plant), consistent in the size of the plant, length of leaf, likewise in the size of the flowers." Such consistency in a hybrid would result if the hybrid population consisted mainly of F1 hybrids. He also recorded that "many colonies of *truncata* may be seen in habitats remote from the haunts of typical *Th. ixioides."* Further investigation of such occurrences seems desirable, but a situation such as this could conceivably result from intrusion of one or very few plants of the out-breeding *T. ixioides* into the habitat of *T. pauciflora,* where ecological factors scarcely permit the former to maintain themselves.

T. aristata, T. nuda, and *T. longifolia* Forst. et Forst. f. are usually accorded separate species status from *T. pauciflora,* though exceedingly similar morphologically. See particularly Nicholls (1952, loc. cit. text facing pl. 27) for a viewpoint on this problem. It is probable that, if hybrids between any of these species and *T. ixioides* were to be produced, they would be exceedingly similar to forms identified as *T. truncata.* It is therefore possible that some plants determined as *T. truncata* are hybrids from these other species instead of from *T. pauciflora.*

Thelymitra ixioides and *T. pauciflora* occur together in many localities in Sydney district and no doubt in innumerable other localities in Australia where the hybrids between them have never been found. Such scarcity of hybrids is not unusual where well established species are involved. The genotypes of such species are adapted to avoid hybridism under natural conditions or else the hybrids, when produced, do not contribute permanently to the breeding population even though they may be fertile. If this were not so the differences between the species would have been swamped by hybridism long ago and they would have lost their separate identities. Production of significant numbers of hybrids between such species is apparently a response to some abnormal local condition, either an external one of the environment, or an internal genetic one which natural selection has failed to eliminate.

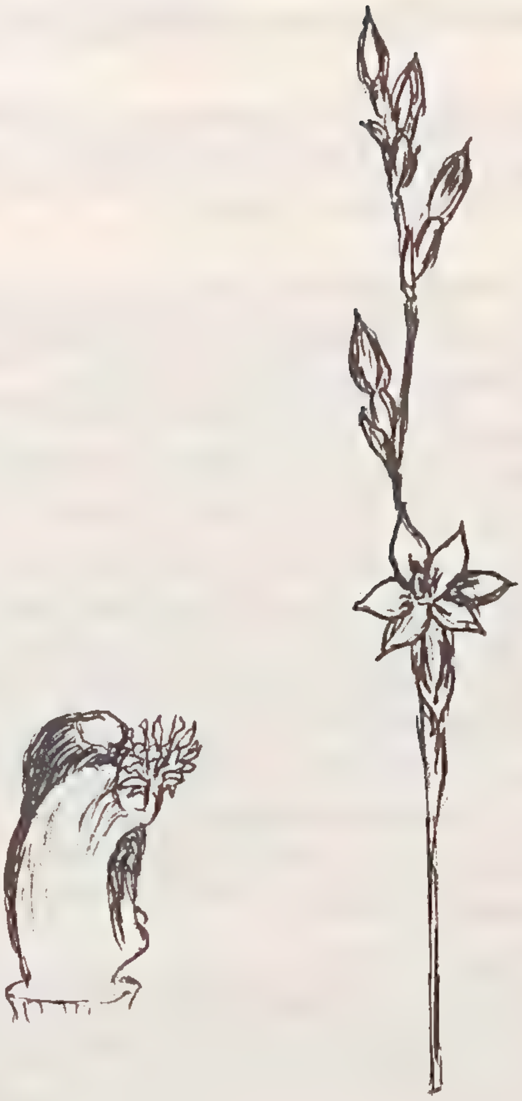

Fig. 2.
Thelymitra pauciflora R. Brown
Natural size. Column from side (enlarged)
(From Nicholls, Plate 30, loc. cit. Part II)

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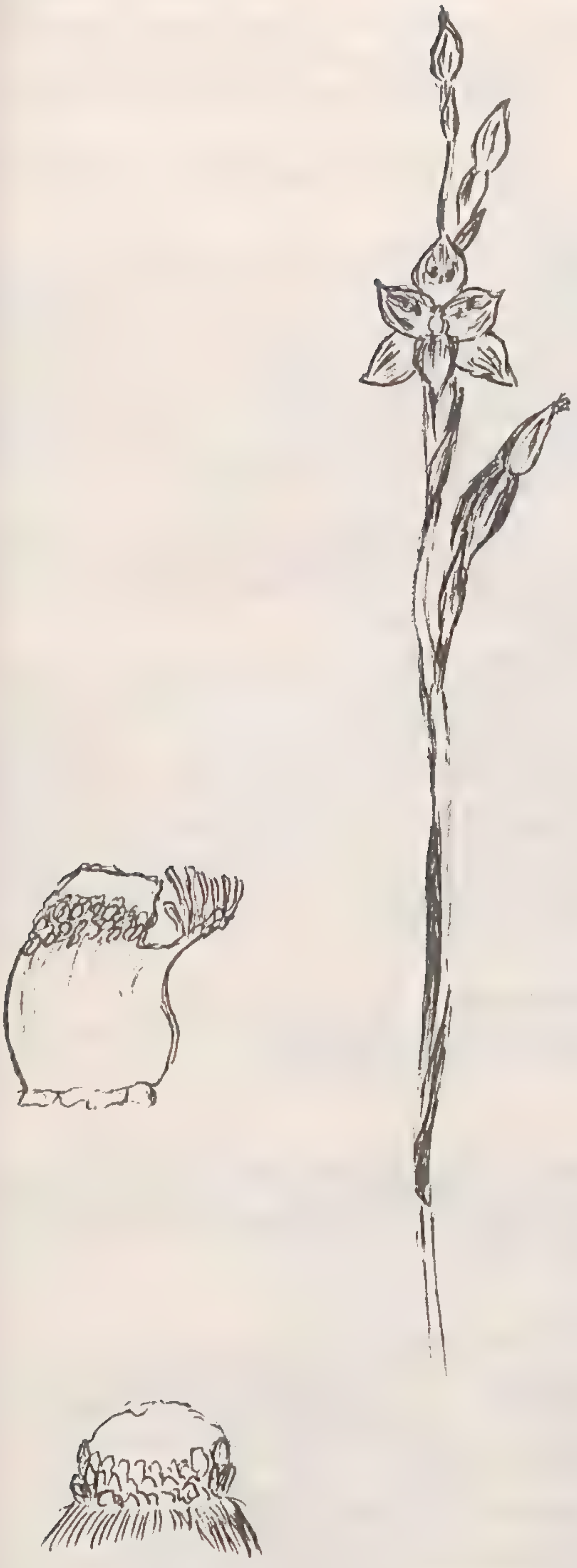


Fig. 3.

Thelymitra ixioides var *truncata* (Rogers) Nicholls Natural size. Column (enlarged) from side and from rear.
(From Nicholls, Plate 7, loc. cit. Part I)

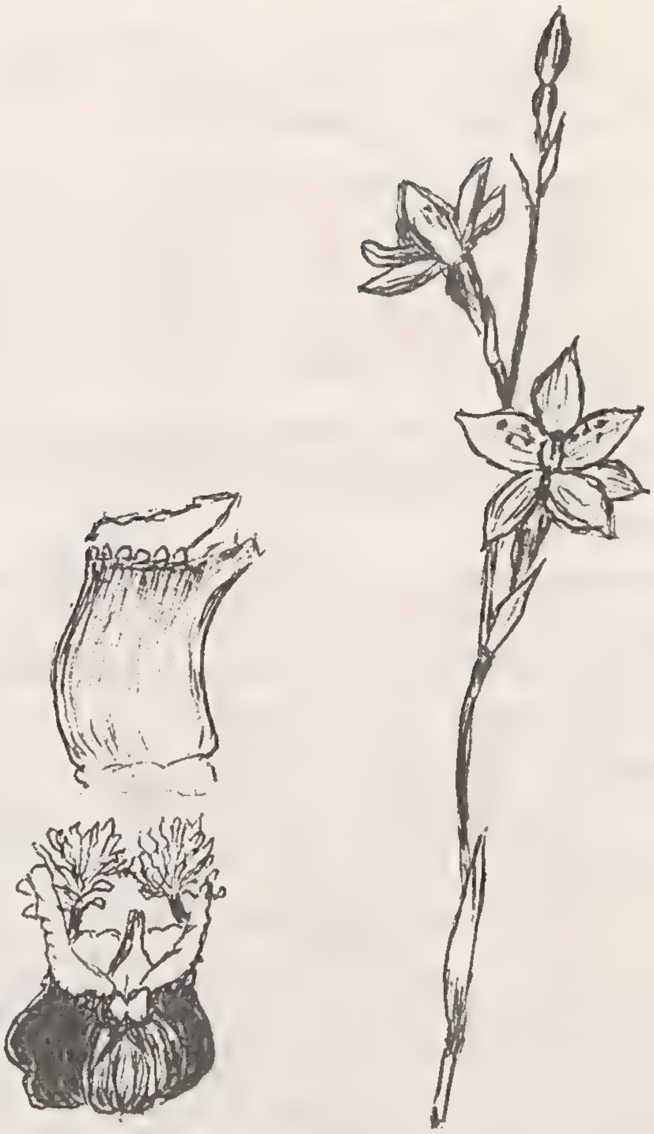


Fig. 4.

Thelymitra ixioides, forma *merranae* (Nicholls) Nicholls (1943). Natural size. Column (enlarged) from side with hair-tufts removed and column from above with hair tufts intact.
(From Nicholls, loc. cit. Part I, Plate 7)

Editorial note:

The references to Nicholls (1951–1952) relate to the Georgian House publication of his *Orchids of Australia* As this work is now rare we quote below the viewpoint expressed by Nicholls in his text facing Plate 27 in Part II (1952). Plate 27 depicts *Thelymitra aristata,* Lindley, var. *megcalyptra* (Fitz G.) Nicholls. This text also appears at page 6 of the 1969 Complete Edition of *Orchids of Australia*, published by Nelson.

"This plate and the preceding three (of *T. aristata,* Lindl.) depict something of the species' versatility in its wide range from wet mountain forests (with rainfall of 60 inches) to mallee sandhills (rainfall 11 inches at Hattah, Victoria). The differences which separate these populations from those of *T. nuda, T. pauciflora* and *T. longifolia* are by no means clear-cut and seem often to be rather trifling. Future more detailed research may prove that all are but variants of a single extremely variable species, in which case the first validly published name of *T. longifolia,* Forst (based upon New Zealand material) must be restored for Australian representatives of the complex".

New Guinea's *Dendrobium rigidum,* R.Br.

by N.H.S. Howcroft

In Papua New Guinea, *Dendrobium rigidum* R.Br. is found from sea level up to about 700 metres altitude. It is both lithophytic and epiphytic in habit, and variable in plant habit, leaf size, leaf shape, and in the number of flowers per inflorescence.

In this paper, the New Guinea species is described along with a specimen (fig.1) collected in an *Araucaria cunninghamii* stand above Bumbu village in the Madang Sub-province.

Dendrobium rigidum R.Br. Prodr. Fl. Novae Holl. (1810) 333; Lindley., Gen. Spec. Orch. Pl. (1830) 85; Bentham, Fl.Aust. 6 (1873) 284; FitzGerald., Aust Orch. 1, pt.4 (1878); F.M. Bailey, Syn.Qd.F1. (1883) 511 et Qd. F1. 5 (1902) 1533; Kranzlin, Pflanzenreich Heft 45 (1910) 292; Dockrill, Aust. Pl. 2 No.13 (1962) 31-2 et Aust. Indig. Orch. (1969) 372-4; Leaney, Aust. Pl. 2. No 13 (1962).

Callista rigida (R.Br.) Kuntze, Rev. Gen. Pl. 2 (1891)655.

Dendrobium desmotrichoides J.J. Smith, Bull. dep. Agr. Ind. Neerl. XIX (1908) et Nova Guin. T. 1. 63, t XXIII, fig. 72.

Description: Epiphytic, sometimes lithophytic, rhizomes creeping, *stems* cylindrical, 1 to 5 internodes, branched, erect to pendant, up to about 27 cm long, each branch terminating in a single leaf inserted in a hollow at the end of the branch. (fig.1A). *Leaf* subcompressed, obliquely lanceolate, acute, sometimes ovate, margins obtuse, thick, fleshy, rigid with rough surface, sometimes with longitudinal ridges, light green, 0.8-5.7 x 2.2-1.0 x 0.3-0.5 cm. *Inflorescence* produced at the axil of the leaf or the first node below the leaf, 2 to 3 flowers, sometimes more, peduncles narrow and short, light green. *Flowers* with an odour, c.1.0 cm or more (fig.1B), yellow green, externally scattered red spots. *Dorsal sepal* ovate oblong, obtuse, slightly concave, c.0.7 x 0.3 cm (fig.1G). *Lateral sepal* including portion of mentum broadly triangular, oblong, somewhat acute, convex on lower margins, 5(-6) nerved, to tip of mentum c.0.7 cm long by 0.3-0.45 cm wide (fig.1E). *Labellum* parallel to the column, gently curved throughout its length (fig.1C), three lobed, 0.8 x c.0.4 mm when flattened (fig.1D). *Lateral lobes* erect, obliquely triangular, red striped with yellow in between, c.0.5 x.0.15 cm (fig.1D). *Mid-lobe* broadly obovate, apex decurved, fleshy, heavily striped and spotted with red and yellow inside, externally scattered red spots and stripes, 3 undulating ridges on the mid-lobe, ridges straight from the base of mid-lobe almost to the base of labellum (Fig. 1D.). *Column* yellow green with some red spots c.0.25 mm long with curved foot 0.25-0.3 cm long, almost at 90° to column; three apical teeth, two lateral and one dorsal. *Anther* long, more or less triangular in lateral outline and oval face on. *Pollinia* four, in pairs.

Distribution: *Dendrobium rigidum* is distributed from the eastern portion of the Cape York Peninsula of Australia to Papua New Guinea and West Irian. The species is fairly common and wide spread along the south coast of Papua New Guinea. It is known to occur in regions along the north eastern coast to the Morobe Province, and more recently found further north at Bumbu at 650 metres altitude. Pickled material from specimens from this region are lodged in the Lae Herbarium (Lae No64037). A map (fig.2) shows some of the known localities of this species.

Flowering: Several times a year, often between the months of February and July. Flowering times have been noted to differ between specimens from different populations grown in the one environment.

Taxonomic Notes: The species *Dendrobium desmotrichoides* J.J. Sm. does not appear to have been recognized as being synonymous with *D. rigidum* before, although Kranzlin notes the similarity between the two species in the descriptions he gives for the two species (Pflanzenreich, Heft 45 (1910)292).

In table 1 some comparisons are made between the Australian *D. rigidum,* Smith's *D. desmotrichoides* and *D. rigidum* from Bumbu *Araucaria* forest (fig.1). It should be noted also that five other specimens from the Bumbu region were also included in the comparisions.

Acknowledgements

I wish to thank Mr. M. Galore of Botany Division, Lae, for the reproduction of my illustration.

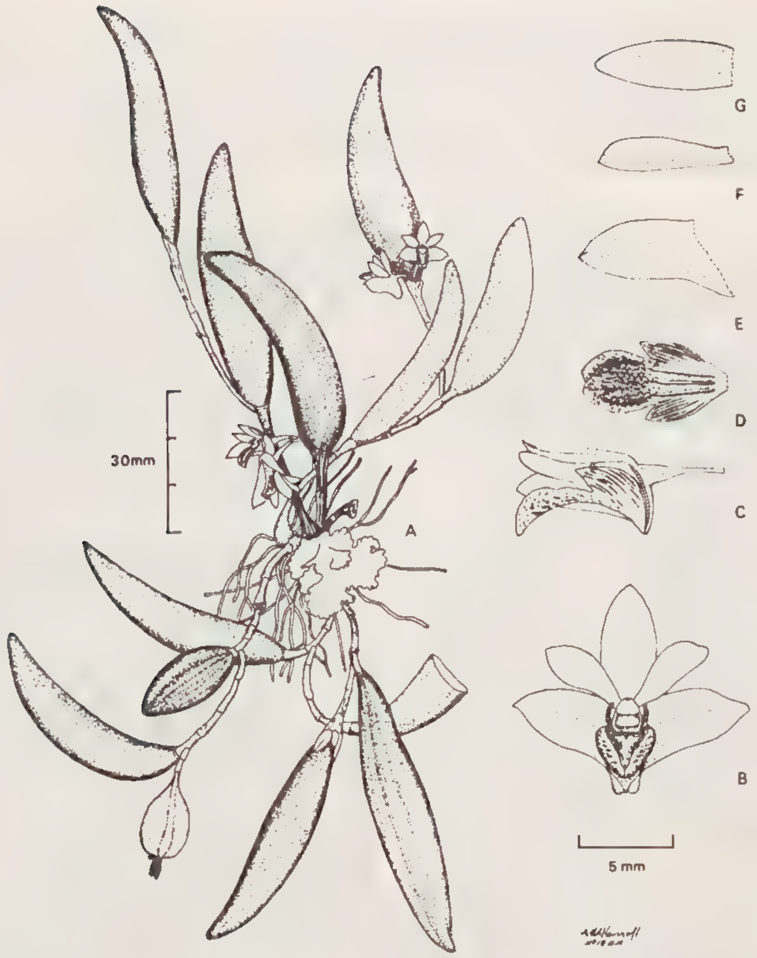
Note

The above mentioned illustration No18 NH has been lodged with the Lae Herbarium under Lae's number 1573 for reference purpose and cannot be reproduced without permission of the author.

COMPARISON OF CHARACTERS
TABLE 1

Species	(1) *D. rigidum* R.Br	(2) *D. desmotrichoides* J.J. Sm	(3) *D. rigidum* Ex Bumbu PNG
Plant	Stems branched, 1-3 internodes per branch cylindrical, slender, erect to pendulous, up to 40 cm long. Single leaf at end of each branch	Stems branched, c.3 internodes cylindrical slender. c.12.5 cm long. Single leaf at end of branch.	Stems branched, 1-5 internodes per branch, cylindrical, slender. Erect or pendulous c.27 cm long. Single leaf at end of each branch.
Leaf	Partly compressed, ovate, obovate, acute, curved on one side, thick, fleshy, rugose. 2.0-6.0 x 0.7-1.5 x 0.7 cm	Partly compressed, obliquely lanceolate, acute, thick, fleshy, rigid, rough surfaced. 4.5 x 1.0 cm.	As for (1) and (2) 0.8-5.7 x 2.2-1.0 x 0.3-0.5 cm.
Inflorescence	Produced near base of leaf 2.5 cm long. 2-7 flowers	Racemes produced behind leaves, short, around 2 flowers. Flowers have an odour.	Racemes as for (1) and (2) 2-3 flowers or more. Flowers have an odour.
Flower	10-15 mm diameter. Broad obtuse mentum yellow.	c.1.45 cm diameter, mentum obtuse, blunt, pale yellow green.	c.10 mm diameter, mentum as (1) and (2) pale yellow green to yellow.
Dorsel sepal	Ovate or oblong, bluntly acute. 6-9 x 3-4.5 mm	Oblong ovate, obtuse, convex, base incurved, 7.5 x 3.5 mm	As for (1) and (2) 7 x 3 mm
Lateral sepal	Oblong or falcate, approximately same dimensions as for dorsal sepal	Acutely triangular with short mentum equal in length to dorsal sepal, 6 mm wide, 5 nerved.	As for (1) and (2) 7 x 3 mm
Petal	Sub-linear to linear, ovate acuminate. Same length as dorsal sepal and less than half its breadth.	Narrowly lanceolate, acute convex, 0.8 x 0.2 cm, 3 nerved.	As for (1) and (2) 7 x 1-1.5 mm, 3 nerved
Labellum	Three lobed, 6-10 x 4-7 mm. Lateral lobes obliquely falcate 2.5-4.0 x 1.0-1.5 mm; mid-lobe broad, oblong or obovate, apiculate, 3 undulating raised lines for the disc, latter portion of keels straight near foot of mentum.	Three lobed, 9 x 5.5 mm Lateral lobes, oblong triangular 3 keels, part (1st) of which are straight, from there on undulating.	Three lobed, 8 x 4-5 mm. Lateral lobes as for (1) and (2). 1-1.25 x 1 mm, 3 keels, as in (1) and (2).

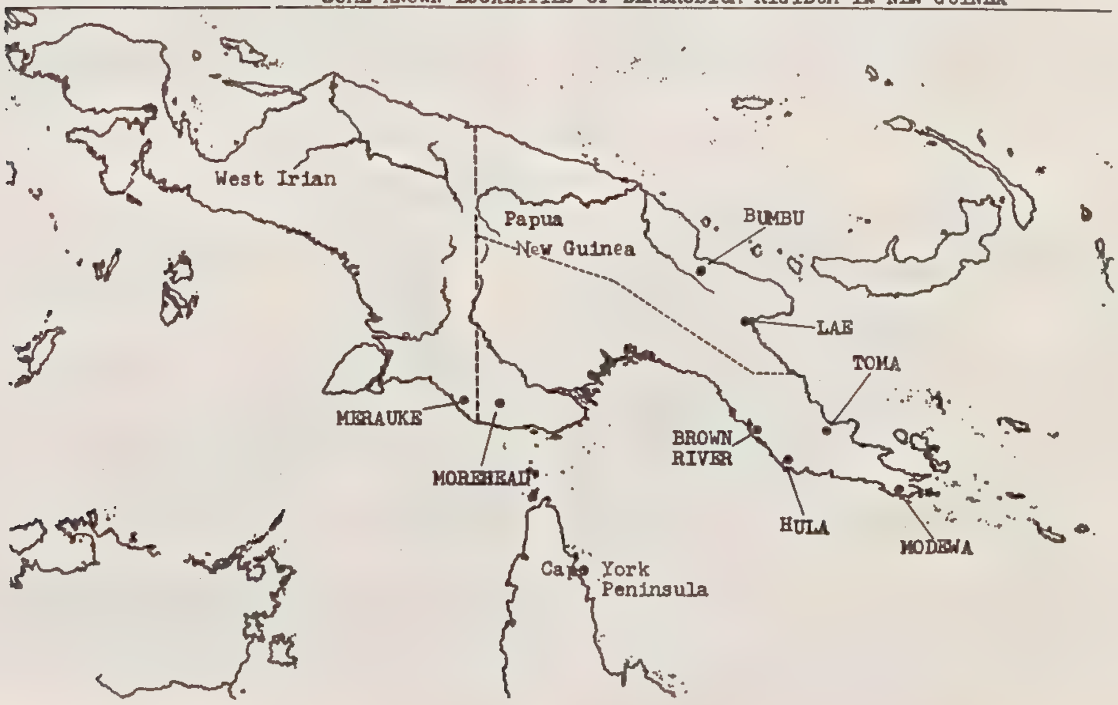
FIG. 1



Dendrobium rigidum R. Br. 1573

FIG. 2

SOME KNOWN LOCALITIES OF DENDROBIUM RIGIDUM IN NEW GUINEA



Some Thoughts on *Dendrobium X delicatum,* (F.M. Bail.) F.M. Bail.

by Ted Gregory

Of all the orchids that inhabit the bush in my part of the world, surely *Dendrobium X delicatum* must be one of the most beautiful and desirable: beautiful in its own right and desirable by virtue of the fact that it has always been a rarity. As we all know *Den. X delicatum* is a natural hybrid of *D. speciosum* and *D. kingianum,* and when we consider the prodigality of Mother Nature and her seedling survival rate; then we can easily see why the "Delly" has always been such a prize when discovered. Pardon my lapse into calling the plant "Delly", but old habits grow on a person, and amongst the old growers who have helped me on my way in the orchid world "Delly" was the standard form of address for this fabulous plant.

Dendrobium X delicatum shares one very definite *D. kingianum* trait in its make-up; that is the infinite variation in its growth and flowering habits. I have seen some clones that are so compact that they could be easily passed as *D. kingianum* if not seen when in flower; yet others are as tall as the average *D. speciosum* in their habit. Of the tall forms, a typical example is the original named clone from Spring Bluff in Queensland, which is a very tall and robust grower, with canes that will reach almost two feet in length if well cultivated. At the opposite end of the scale are some of the clones from the Gloucester Bucketts that will only have canes of a maximum length of six inches in the best of seasons.

The flowering habit of the "Delly" is just as variable as its growth: some have racemes of at least a foot in length with many flowers which may be from an inch to an inch and a half in diameter, depending on the clone. Others may have short upright racemes that carry very erect flowers which can look exceedingly good on the showbench. Some clones may combine all these good features and show very few of the bad ones, and when grown to specimen size, these particular clones must be one of the most beautiful sights of the Australian orchid world.

The colour of *D. X delicatum* flowers can be anything from the purest white to the deepest pink, with almost any shade or combination in between. Some superb buff coloured clones came from the Alum Mountain area in years gone by, the colour of these flowers is a rich creamy buff, with an almost pure *speciosum* labellum. This colour scheme, combined with heavy texture makes for a really superb clone.

Another glorious clone from the same area is the famous variety named *D. kestevenii* "Coloratum" by Rupp many years ago. This is a very compact growing clone which is quite different from every other *D. X delicatum* that I have ever seen; both natural and man-made. The racemes on this clone will normally only have two, three or four flowers on them. For this flower I wish we could have colour printing or at least show a slide, as words cannot do justice to this flower. The buds are almost crimson before they open, and when they do, the flowers are a rich pink on the inside, with a concentric shaded effect on the petals. The flowers open very flat and have a very dark *speciosum* type labellum.

Some clones discovered not far from this area have a very fine flowering form, white flowers with definite pink tips on the petals, which give a beautiful splash-petal affect.

Over the years I have seen many small seedlings of *D. X delicatum* in this Bulahdelah – Gloucester area, which showed that this native hybrid was still occurring in nature, which was a comforting factor to me, as I hate to see plants disappearing from their natural haunts. The great tragedy is the fact that a great proportion of the *D. speciosum* plants from these areas have been stolen or destroyed, which greatly reduces the chances of this fine natural hybrid recurring here in the future.

D. X delicatum was once regarded as an extremely rare orchid, but as this part of the world became better searched, clones came to light from most areas where both parents grew in reasonable profusion and in a couple of areas became almost common, which seems to me that these clones had been in existance for many, many years and had been "selfed" and multiplied themselves. I have seen some areas where *D. X gracillimum* was so common that it must surely have been selfed.

As we all know, *D. X delicatum* is almost entirely lithophytic in its habit, but to prove the old rule about exceptions, I have a beautiful clone that was discovered growing merrily on a giant rosewood tree many moons ago. I guess this "Delly" would be still growing in nature if some saw miller hadn't fancied the rosewood: this plant was discovered still on the head of the tree in the windrow waiting to be burnt. I also know of another clone that was dislodged from its rock and tumbled down a cliff by forestry workers clear-felling an area: luckily, some canes were rescued with undamaged eyes on them and are now happily growing amongst people who will insure that the clone survives.

Being lithophytic by habit, *D. X delicatum* adapts to bushhouse conditions easier than most epiphytes as long as one remembers one paramount fact, and that is that in nature this plant grows in the most exposed situations wherever there is always a huge amount of air movement, and this I think is the most important point to remember when attempting to cultivate this plant in captivity. As a backup to this I must mention that the "Delly" that has won at our local show for as long as I can remember is grown sitting in the middle of my mate's backyard year round in full sun except from the time the buds commence opening till the flowers go off. In this part of the world there is no doubt that both *D. speciosum* and *Den. X delicatum* will do better this way, provided one can keep the neighbours' cats, dogs and kids from putting the plants into orbit. I have this problem in a big way and have had to put my plants behind protection for their survival. To give them maximum air movement they are on the eastern end of by cymbidium house, which is only enclosed with bird-wire. This gives them full sun till mid-day and from then on they have to put up with the fifty percent shadecloth that covers my cyms. I have two rows of *D. speciosums* and *D. X delicatums* behind the birdwire where they really do well and also help to break the wind down to a breeze before it hits my cyms.

I also have "Dellies" growing under intermediate and deep shade as well, where they also do well, but I think the ones in the aforementioned situation do best and suffer from less fungal attacks. If grown well "Dellies" need to be put in fairly big pots compared to what one would normally use unless one wants to have to repot them every year, as such is the vigor of their growth. They will grow in any type of pot that is available but for best results, terracotta is in a class of its own, and the shallower the pot the better. If deep pots are used they should be filled to at least a third of their depth with crocks or lumps of sandstone. After the plant is trimmed and fungicided it is stood in the pot and filled around with your normal native mix and just firmed round the edge of the pot. If the plant is inclined to wobble in the pot I like to put a piece of twine right over the plant and round the pot to keep it firm till its roots take hold. I much prefer this to tamping the plant down like a rock in the pot. And be sure that the rhizome is not buried in the mixture. The mixture that I prefer is half-and-half charcoal and red mountain oak bark in pieces from a quarter to three-quarters of an inch in diameter: this will last for years and still let the air to the roots of the plants.

Fertilize lightly through the growing season and water the same way, as more "Dellies" are lost through wet feet than dry ones.

With *D. X delicatums* a fungicide programme should be adhered to in damp weather as they are very prone to attacks by types of Phytophthora fungus which kill even big plants in a short time. If this fungus gets past your guard, after a while you will notice a cane or two on your plant start to go brown and after a while these canes will drop their leaves. If you break one of these canes it will be a squashy brown inside and will have a very rank smell. The only remedy in this case is to cut the rhizome behind the rot, throw out the infected piece, seal the remaining piece and resume a fungiciding programme. As long as you have cut behind the infection the plant will recover and continue on well.

"Dellies" are like Cattleyas in one regard, and that is concerning their repotting time, and that is not when they finish flowering, but when their roots begin to appear, and depending on the clone, that can be any time from the end of September to the end of January. I have a friend of many years who has a magnificient clone that is only starting to move as I write this (28-1-78).

All the prattle that I have gone on with so far has been concerned with natural *D. X delicatums* but as you all know the same cross has been made quite often by members of the orchid fraternity, with varying degrees of success. As I have spent most of my life within fifty miles of Gloucester I have only heard of some of these crosses: but I have had quite a bit to do with the cross made by the late Ira Butler, having flowered it and seen hundreds of them flowered. Some superb flowers have came of this cross of his and they will do a lot towards keeping interest in our native orchids and their hybrids. I corresponded with Ira but never met him, worse luck, as surely he was one of the greats in this hobby of ours.

LETTERS to the EDITOR

Conservation and Conscience

Dear Sir, 4/5/78

Many and varied suggestions are made as to our best approach to the conservation of our Native Orchids.

Can we sort them out, and arrive at a solution that is practical, and offer a reasonable chance of success ?

I can claim first hand knowledge of the continued depletion of our forests . . . can, in fact, give you enough instances of complete devastation of various orchids, to fill the pages of The Orchadian.

Laws, National Forests, or the remoteness of the growing areas have little bearing on the result; nor has conscience, so often quoted by our most thoughtful members, played any part.

To calculate the enormous expense of effectively policing our forests, must rule out any effective control in this direction.

The often expressed opinion that we could concentrate on nursery breeding of our best orchids brings the question, are we hoping to save all our Natives Orchids, or only some of them ? Again, why divert our activities from the primary task ? Selective breeding could have its place after we have solved the many difficult problems we undoubtedly face.

With this thought I must also include the interesting and popular hybrid breeding. Enough has been done in this area to prove that very few pay any compliment to their parents; nor in fact, to their breeders. To me they rank as novelty plants.

CAN WE NOT START, SAY, AT THE GROUND LEVEL ?

An enthusiastic programme of selfing ALL our Natives. Thereafter the flasking or (where this activity fails) by meristem or tissue culture ? In this area we will find problems that call for the greatest skill on the part of our Research Officers.

Successful deflasking, and the subsequent growing on, is also fraught with many difficulties. It will not be without considerable expense, but our needs, will, I feel sure, be amply met. Our various "Groups" all appear to be financial.

Finally, when we can distribute seedlings far and wide, to all who will grow them, then we can feel secure and that we have succeeded. It will take a long time, but we must be prepared to make a start. Some "Groups" have put on simple demonstrations of pollinating a flower. Recently I heard an old grower say he had never previously tried his hand. Can we not agree on a workable policy that is viable, and practable, ?

30 Robey Road,
Coal Point. 2283 NSW. Bill Murdoch

* * * * * * * *

"Australia's Native Orchids" — Revision.

Dear Sir, 13/4/78

Further to your review by Mr. Blaxell (The Orchadian December, 1977 — p.145) of our book AUSTRALIA'S NATIVE ORCHIDS by W. Watson Sharp, I would like to point out that the first and only reprint of the book in 1977 was in response to orders received, plus a number for general sale. At no time have the publishers indicated to anyone that a second reprint was ever intended.

In fact, we stated categorically that no additional reprints were being ordered, but instead we intended, even at that time, to have an orchid expert revise the book — which would then be published as "a completley revised and updated Second Edition".

I trust this information corrects the impression that we, as book publishers, are lacking scholarly responsibilities. Certainly, the opposite is the case as witness our accompanying book catalogue and our greatly expanded list for 1978/79.

I trust, in all good faith, your journal would be prepared to review again the revised and updated book on publication.

Murray Book Thomas B. Floyd
Distributors Pty Ltd. Managing Editor.

(We look forward to seeing the revised book and shall be pleased to have it reviewed. Space limits prevent comment on the "accompanying book catalogue", other than to say that its 27 titles range from "How to Sail Small Boats" to "The Magic of Cake Decorating". — Editor)

* * * * * * * *

Following is an extract from a personal letter from Steve Clemesha, dated 23 April, 1978.

. . . (Concerning) *"the Checklist of Australian Native Orchid Hybrids, D. striolatum x D. beckleri* is listed as a natural hybrid and gives me credit for its discovery. Actually it is an artificial hybrid which originally was made by Bob Curtis of Sutherland . . .

On page 171 of the March 1978 *Orchadian* a list of Pterostylis included *P. oreophila* spelled *osiophila* . . . "

c/o P.O. Moonee Beach
N.S.W. 2450. Steve Clemesha

(The list of Pterostylis was in Rick Datodi's letter concerning swapping terrestrials. We must apologise to Mr. Datodi for my misreading his handwriting and to Mr. Clemesha for failing to recognise that the reference was to *Pterostylis oreophila,* S.C. Clemesha, which was first described as a new species in The Orchadian Vol.4 No.11 p.100 (Oct. 1974). It had been discovered at Kiandra N.S.W. on 18th December 1967, by S.C. Clemesha and B. Whitehead. In 1974 it was known with certainty only from the type area, but Clemesha thought it probable that it would also be found in Victoria and Tasmania. We should be glad to hear of any other recordings.

— Editor)

* * * * * * * *

Dear Sir, 23/5/78

I am attempting to purchase a copy of "Orchids of Australia" by W.H. Nicholls (the complete work) and wonder if I might contact someone with a copy to sell through "Letters to the Editor" in the Orchadian.

I would also like to suggest setting aside a section for small advertisements from members of ANOS for trading the paraphernalia of orchid growing (at a price, of course).

64 Sampson Crescent,
Bomaderry, N.S.W. 2540. Kenneth Brightwell.

(A "trading post" section for members will be established in our next issue, provided there is sufficient support for the idea by early August. The cost will be $1.00 per line with a minimum charge of $3 for up to three lines. — Editor).

The Genus *Calochilus*
— Observations and a Field Guide

by Peter Vaughan

This article was prompted by ANOS members at Group Meetings in Sydney who have problems in identifying the various *Calochilus* species and have not the time or the training to tackle a botanical key. I shall treat the "beardies" here by way of a field guide by putting in the simplest form the differing features of this genus.

The genus *Calochilus* is related to *Thelymitra*, the main differing features being the hairy labellum and the column shape. One *Calochilus* species — *C. imberbis* — does not have a hairy labellum and thus looks a little like a brown *Thelymitra*. This species is suspected of being a peloric form (ie. the labellum assuming the shape of the petals) of *C. robertsonii* and may one day be reduced to a synonym of that species. The leaf of a *Calochilus* is similar to a leaf of *Thelymitra* spp. but the former tends to be thicker in cross-section and thus more rigid.

There are approximately 11 members to the genus — namely

C. campestris (Sth. Australia to Sth. Queensland, Tasmania & New Zealand),
C. robertsonii (all Australian states & New Zealand),
C. gracillimus (Sth. Queensland & NSW),
C. grandiflorus (Sth. Queensland, NSW & Northern Victoria),
C. imberbis (Victoria & Tasmania),
C. richae (Victoria),
C. paludosus (Sth. Australia to Sth. Queensland & New Zealand),
C. holtzei (Northern Territory & Nth. Queensland),
C. sp. — undescribed, from Nth. Queensland — see Dockrill, Australian Indigenous Orchids vol.1 p.79,
C. caeruleus (New Guinea),
C. neocaledonicus (New Caledonia).

Only recently reduced to a synonym of *C. campestris* was *C. herbaceus* (syn. *C. saprophyticus*). In reducing these to synonymy David L. Jones (Orchadian Vol.5 No.6 P.83, December 1976) said that the leaf developed where the plant grew in dry soil and failed to develop in damp areas. Three facts are of interest here. The first is that at Atherton, North Queensland, a very wet area, a plant of *C. herbaceus* was recently reported but neither it nor *C. campestris* were thought to extend so far north. The second fact concerns two discoveries of *C. herbaceus* in NSW by Laurie Holmes of Wyong, NSW Central Coast. The first plant was found during a fire at the sawmill where Laurie worked. One of his workmates took a bulldozer to move a sawdust heap away from the fire when Laurie, an ardent native orchid grower, found what looked like an orchid in bud — at the bottom of the sawdust heap. This specimen was forwarded to the Sydney Herbarium and identified as *C. herbaceus*. Twelve months later Laurie was digging a hole under a tree which was eight feet in diameter so that a dynamite charge could be placed under it to remove it for road construction. On one of the last shovel loads of soil Laurie discovered yet another one of these queer orchids, this one being four feet deep and below a monstrous tree. Yet it was in full flower ! This specimen was virtually undamaged and readily identified as *C. herbaceus*. Subsequent to these discoveries I believe a plant has also been found on the western slopes of Southern NSW.

The third interesting point concerning *C. campestris* and *C. herbaceus* is a discovery by Mark Clements of Canberra Botanic Gardens. Mark has attempted germination of both forms of the species and has had no success with *C. herbaceus*, even when attempting symbiotic culture with a fungus found necessary for *C. campestris* seed germination. This may indicate the initial stage of the formation of a new species.

Thus we have a rare species that pops up at the oddest places and this often points to the fact that it is an aberrant form of a more widespread species. But if the change occurs as readily as David Jones suggests, why is not *C. herbaceus* more common ? Perhaps *C. campestris* grows happily for years and if it is waterlogged one year it fails to develop a leaf and still flowers but lives off its old tuber without replenishing it; so that plant dies. Simple observations show us that *Calochilus* species are among the first to grow in a cleared area, especially beside roads. Most likely if a swamp recedes *Calochilus* species would readily grow in this new environment. In a year or two the water levels may rise to a high point again and the orchid finds itself with wet feet. Anyone having a hardy plant of *C. campestris* could test these ideas by either heaping 2-3 feet of sawdust over it or water-logging the soil.

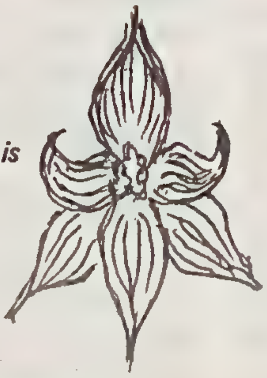
Other *Calochilus* species that stir interest are *C. grandiflorus* and *C. gracillimus*. I have not seen either of these but the former is commonly recognised as being found in northern NSW and Southern Queensland. Yet there is an isolated occurrence in northern Victoria; whilst Cady found plants southwest of Nowra, NSW. Those people who have seen *C. grandiflorus* say it is unmistakably different. Why has it not been found in the intervening area ? *C. gracillimus* is also subject to this phenomenon as isolated specimens have been found from its home in the Blue Mountains all the way up to South East Queensland.

A Simple Field Guide to some *Calochilus* Species

(Drawings natural size)

A — Labellum without hairs

— *C. imberbis*

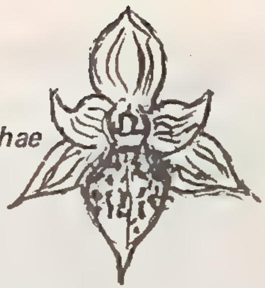


A* — Labellum with papillae and/or hairs — proceed to B.

B — Labellum covered with papillae only

— *C. richae*

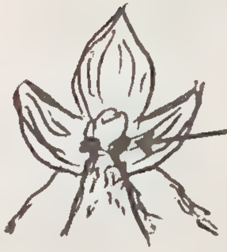
(This is a very rare species — restricted to a very localised area. Sighted on few occasions. No colony locations known)



B* — Labellum covered partially by hairs — proceed to C.

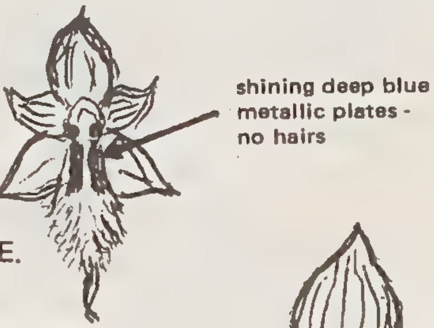
C — Labellum with distinct glands (eyes) on each side of its base.

— proceed to D.



D — Labellum basal third covered by metallic plates — the remainder hairy.

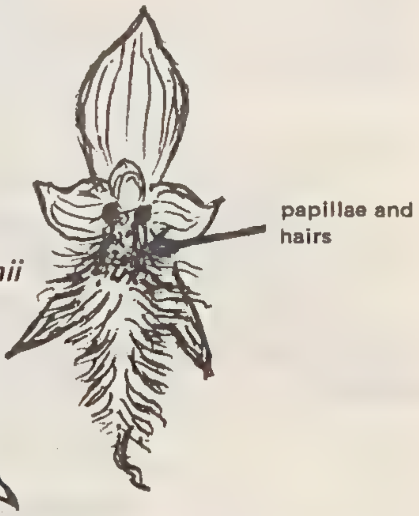
— *C. campestris*


shining deep blue metallic plates - no hairs

D* — Labellum base covered with hairs and papillae — proceed to E.

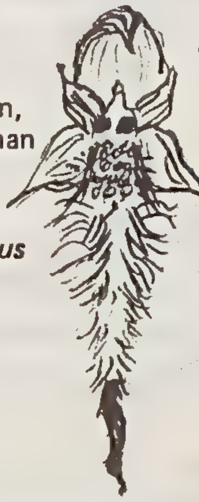
E — Labellum tip flat in cross-section, short (up to ¼inch) and bent.

— *C. robertsonii*



E* — Labellum tip rounded in cross-section, longer than ¼ inch and straighter than in E.

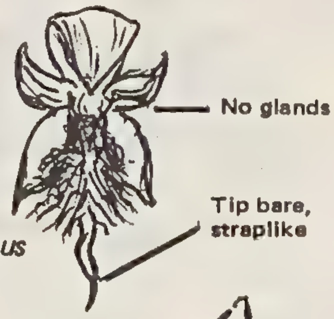
— *C. gracillimus*



C* — Labellum base without glands; labellum tip glabrous (hairless) and about half the length of the whole labellum. — proceed to F.

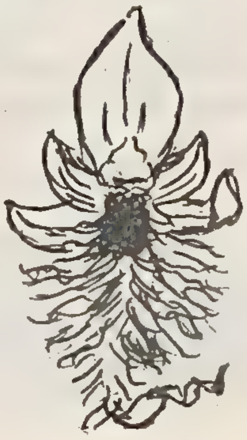
F — Flower up to 35mm from tip of dorsal sepal to tip of labellum when flattened. Leaf robust and channelled, often withered and no trace at flowering time but stem with well developed stem leaves.

— *C. paludosus*



F* — Flower over 40mm. long when flattened. Leaf long and narrow. Plant larger in all respects.

— *C. grandiflorus*



4th ANNUAL SPRING SHOW AT MONA VALE – SEPTEMBER 8, 9, and 10, 1978.

A Spring Show devoted exclusively to Australasian Native Orchids.

This annual event has become the high point of the A.N.O.S. calendar. Nowhere else in the Sydney Metropolitan Area (if not the State) will you see such a varied display and such concentrated quality, as well as quantity, of native Australian and New Guinea orchid species and hybrids.

All members of A.N.O.S. who are able to come to Mona Vale in September are urged to do so. It is an opportunity to meet other members, compare different growing methods and ask all the questions you wish. Having seen the flowers and asked your questions you will be able to choose the potted species plants, seedling hybrids and ferns you want from the sales counter. Then, on the more scientific side of orchid collecting and study you can have a look at a number of specialised displays such as the herbarium specimens.

This show is open to all members of ANOS as well as other societies, so if you have native orchids flowering in September bring them along and make it the best ever. There are Silver Medals for Champion Native Species and for Champion Native Hybrid as well as other prizes within classes.

SHOW DETAILS

Mona Vale Community Hall — Pittwater Road and Park Street
Friday September 8 — benching only, to 10 p.m.
Saturday September 9 — 9 a.m. to 9 p.m.
Sunday, September 10 — 10 a.m. until Prize giving at 4 p.m.

See that you get hold of a Show Schedule from your Society or Group in July — or earlier, from the Show Marshall, Norman Hilliger, 14 Wangara Street, Mona Vale, 2103. Phone: 99 2468.

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NOTICE OF ANNUAL GENERAL MEETING OF ANOS AND ELECTION OF COUNCIL

Notice of the following dates is hereby given by the Election Returning Officers appointed at the Annual General Meeting of 3 September, 1977, in terms of Clause 9 (c) of the ANOS Constitution:

o	Closing date for Nomination of Candidates for Election to Council	Thursday, 20 July, 1978
o	Date of Election (Polling Day)	Thursday, 31 August, 1978
o	Date and time of Annual General Meeting	10 a.m. Saturday, 2 September, 1978

The President, Mr. J.J. Betts, concludes his three year term and therefore resigns from that office on 2 September, 1978. Nominations are required for all nine offices of Councillor.

— J. Walker, A. Blombery.
Election Returning Officers.

The venue for the A.G.M. this year will be the Ryde School of Horticulture, 59 Parkes Street, West Ryde, N.S.W. Members are assured of an entertaining morning and an opportunity of getting together with old and new Councillors. Please contact the Hon. Secretary, Keith Edwards, for any further details.

THE ANOS PANEL OF JUDGES

At its meeting on 9 May, 1978, the Council of the Australasian Native Orchid Society passed the following resolution:

"That Council now appoint the following members as Judges, in terms of Clause 20 of the ANOS Constitution:

Lloyd Bradford
Murray J. Corrigan
Robert M. Lowe
Walter T. Upton

with effect from May, 1978".

(Clause 20 (a) provides for standards for the judging of Australasian native orchids and Clause 20 (b) provides that "Council may elect a panel of judges for judging Australasian native orchids at the Society's functions.")

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R.D. FitzGerald's "AUSTRALIAN ORCHIDS" (Part 2) (Uncoloured).

— Nine engraved plates depicting 15 Australian orchid species, with accompanying descriptive text, were offered for sale to the highest bidder by 17 February, 1978. Although no satisfactory response was received by the closing date, several members subsequently expressed an interest in purchasing this now rare work of 100 years ago. ANOS Council has therefore decided to renew its offer. Bids are now open unitl 10 July, 1978. They should be submitted to the Secretary, ANOS, P.O. Box C106 Clarence Street, Sydney, 2000, and should be enclosed in a sealed envelope marked *"Bid for FitzGerald Drawings."* These will be opened at the July meeting of ANOS Council (11.7.78) and all bidders will be informed personally of the result within the following fortnight.

SEED FLASKING SERVICE

From this service to members of ANOS, it is expected that the following flasks will be available at $6 per flask (freight extra) from 1 September, 1978. These are extra flasks ordered by ANOS Council after subsidising the initial flasking of pods sent in by members.

Dendrobium teretifolium x D. tetragonum,
Cymbidium canaliculatum var. "Sparkesii",
C. suave, Dendrobium cucumerinum,
D. dicuphum,
Sarcochilus hartmannii,
S. weinthalii,
Phaius australis var. *bernaysii.*

Please send orders to

The Secretary ANOS,
P.O. Box C106 Clarence Street,
SYDNEY 2000.

Winter Cultural Notes

Dear Orchadians,

I hope this note finds all of you well and fit after what has been one of the wettest autumns in history in this part of the world. Some of the days around Easter really had to be experienced to be believed; a fine example was Good Friday on which day almost eleven inches of rain fell here in the Manning River area. And this is chicken feed when compared to my native area, the Barrington Tops where falls of from 30 to 36 inches were recorded in 24 hours in the Pheasant Creek – Mt. Mooney area. Small wonder that there was some fair dinkum erosion on the new Scone to Gloucester road.

After a season like this, one can really tell whether a suitable compost has been used or not. To check, just tip one plant out, and if the roots are all through the compost and looking white and healthy, then you have no worries at all.

As this issue reaches you, June will be well and truly with us, bringing with it the one day in the year that I am always glad to see go by; that is the day with the shortest hours of sunlight. Even though there is a lot of winter yet to come, I always feel more cheerful as the days stretch out once more and with a little bit of imagination, one can see that glorious Spring display coming up again.

I guess I had better stop romancing and get down to the old nitty-gritty of getting our plants through the winter so they can give us that special effort in the Spring. At this time of year snails are one of our main enemies, both the introduced garden variety and the tiny native forest snails. These terrors can ruin your Spring flowering before it even commences by eating off the tiny flower spikes, perhaps before you have even seen these spikes yourself. Baysol (R) is still as good as you can get for the garden type, but those little forest fellows take some shifting: a good belt with Dieldrin is about as good as one can do with them. Dieldrin will also stop earthworms from breaking your cymbidium compost down too quickly, if you happen to grow a few "blady grass orchids" as well. An odd spraying with Malathion (R) is always time well spent in my opinion, even in the winter, as there is always a bug of some sort waiting to demolish that favourite plant that is going to bring home the bacon next Spring.

Before I leave the subject of snails, I must mention that occasional night inspection by torchlight: this is a very good way of disposing of those super-size snails that march out from next-door once the sun goes down; also such an inspection may show you other pests that you may not even know about in daylight. An inspection on a breezy night can sometimes pinpoint that snaky draught that is almost turning one or two plants into eskimo pies. A piece of plastic placed in the right place can often make a bush house degrees warmer. We always put cheap plastic on the windy sides for the winter. This is taken down again once the weather warms up to allow full air circulation, which is paramount to our natives in the hot weather.

Whilst on the subject of plastics; for those who do not have a glasshouse to protect their flowers, quite often they could rig up a bit of plastic sheeting over one corner of their roof to keep those spring showers off their flowers. It's one of the tragedies of our natives that they will hang their heads if they get too wet once they are open. Anything that can keep these little beauties in top condition for an extra week is money well spent in my book.

Most of our natives do not need a great deal of feed in the winter, as they are fairly dormant however, the sarcochilus of south-eastern Australia are something of an exception in my opinion. *S. hartmannii, S. fitzgeraldii, S. falcatus, S. olivaceus,* etc., will really prosper if you keep the feed up to them at this time of the year. *S. falcatus* in particular will grow roots like vandas if they are well looked after in the colder part of the year.

As I have often mentioned, with almost all of our natives, the secret of fertilizing them is "little and often" rather than heavy and occasionally. As Nature designed them they are made to grow hard and tough, and this is one thing that we must always remember if we are to become really top native growers. We can improve their growth and flowering no end without overfeeding, and having the plants become too soft. In my experience, once natives become too soft the plants become more prone to disease and their flowering will suffer as well. I prefer a fertilizer that combines all the trace elements rather than those that more or less contain nothing but nitrogen. I don't think our natives need great amounts of nitrogen to do their best, but all the trace elements are a must if one wants good balanced growth.

Good growing till next time.

Ted Gregory.

SMILEY-EYE'S COMPLAINT

"Smiley-eye comes from North Queensland and New Guinea", said Pontifex, the well-known orchid buff, in reply to the Inexperienced New Member.

"Grows hot, then ?" asked the I.N.M.

"Of course !" said Pontifex. "Tropical, y'know."

"Don't any of the North Queensland and New Guinea ones ever grow cold ?" asked the I.N.M. hopefully.

"Only those from the highlands, like sophronitis – from the mist and fog – living in really high mountain cold.
D'you follow ?"

"Who on earth," interrupted Mrs. I.N.M., "is this Smiley-eye person ? And what's this dreadful-sounding disease the poor highlanders get ? Is it from the cold ?"

Blushing, the I.N.M. (a bookish fellow) decided to explain. "Mr. Pontifex – er. . Max, here – is referring to two dendrobiums. One is *Dendrobium sophronites* – not the genus *Sophronitis* from South America – and the other is *Dendrobium* . . . er. . . well. . . Smiley-eye. D'you follow ?"

"Not quite," she said, with smiling eyes. "Don't you mean the orchid I was reading about in that book by Roger Bedford the other day – the one called *Dendrobium smillieae* – that was named by Mueller after a Mrs. E.J. Smillie ? How could it be Smiley when it's spelled "Smillie" – as in 'silly' ? The – "ae", as in 'eye', is correct of course. Comes from the Latin – genitive case of the first declension, y'know. Means 'Mrs. Smillie's dendrobium'. If it had been Mr. Smillie's, ofcourse, it would have been *smilliei* and pronounced 'smilly-ee' – genitive case, 2nd declension. Do you follow ?"

"No !" snapped Pontifex (for he hadn't) "Everyone who knows orchids calls it SMILEY-EYE !"

And they do . . . y'know. Regardless of poor Mrs. Smillie !

– Portnoy.

(Personally, I give no credence whatever to a suggestion that Mueller may have called it after a dog he may have had, named Smiley. – Editor).

"CRISTATA COMPOUND"
A Report on the Rediscovery of *Caladenia cristata*
by Donald R. Voigt

(Reprinted with acknowledgement to the Australian Orchid Foundation, from the May issue of the Foundation's Newsletter. Mr. Voigt is a member of the A.O.F. and of the W.A. Native Orchid Study and Conservation Group.)

Caladenia Cristata was re-located at Dowak, near Salmon Gums, W.A. on 7th September, 1977, by Mr. Don Voigt, and soon after, the identity of the species was confirmed by the Western Australian Herbarium.

The original collection site was at Miling, some 400 miles away, and this species has remained undetected for 54 years.

Mr. Norman Scheer, farmer, on whose property the species was rediscovered, indicated that he was in favour of fencing the scrub area, but was not in the situation where he could do so himself, and also indicated that he would be turning sheep onto the land no later than January, 1978.

Mr. Don Voigt made an approach to the WA Native Orchid Study & Conservation Group regarding the situation. This Group, in turn, applied to the Foundation for financial assistance to purchase the fencing materials, suggesting that voluntary labour would be available from the enthusiastic orchid lovers.

Don Voigt took the liberty of naming the area "CRISTATA COMPOUND". This compound is situated 6 miles off the Norseman-Esperance Highway where a dry weather track leads to the Compound. The task was completed on 27th December, 1977.

The materials that were used were the same as the existing farmer's fence, as the area was already fenced on two sides; the working party moved six chains closer in to the scrub, as it saved six chains of materials from the original plan.

The patch of scrub that became "CRISTATA COMPOUND" was natural scrub and left, because at the time of clearing and logging in the area, the farmer, Mr. Norm Scheer liked the native scrub and the wildflowers, etc. so he just enlarged the windbreak from 1 chain to 6 chains wide at this area.

The scrub and soil within the Compound is not common to the area, but is similar to country near Southern Cross some 200 miles north west, while a lot of similar country exists east of Lake King, about 120 miles west of Salmon Gums.

Caladenia cristata was rediscovered rather late in the season, but several other orchids were observed to exist in the Compound, such as *Caladenia filamentosa, Pterostylis sargentii, Diuris longifolia* and *Thelymitra nuda.*

A careful search will be made during the season of 1978, when it is expected that other species will be recorded within the Compound. Efforts will be made to have other vegetation recorded within the Compound.

A suitable sign is being planned and will be erected, which Mrs. Scheer has offered to paint. The farmer reserves the right to be asked to enter the area where a book, donated by Don Voigt will be kept in a suitable receptacle for visitors to sign for added interest.

The area fenced was approximately 11 chains X 6 chains plus, making the "Cristata Compound" approx. 6.7 acres. As *Caladenia cristata* was rediscovered in this area on 7th September, the enclosure was completed on 27th December, 1977, the species appears safe from stock, kangaroos and other four-legged inhabitants, but a possible problem may arise from the footsteps of interested enthusiasts in this confined, although rather isolated area of "CRISTATA COMPOUND"

THE AUSTRALIAN ORCHID FOUNDATION

The objectives of the AOF have been widely publicised througout Australia and will not be repeated here. Any person or group who has a desire to do specialised work on any subject that relates to the orchid species, whether they are endemic or otherwise, has an open invitation to apply for support or grants. Applications should be sent to the registered office of the Foundation, at 107 Roberts Street, Essendon, Victoria, 3040.

An up-to-date list of projects funded for 1978 is given hereunder. Their significance for Australian orchid enthusiasts is apparent and the Directors would welcome suggestions for ways and means by which funds can be attracted to the Foundation.

ALLOCATION OF FUNDS FOR PROJECTS DURING 1978

The Directors of the Foundation announce the following allocation of funds that have been or will be required for these projects during the year 1978:-

1) Studies into the pollination of certain Western Australian terrestrials by Warren Stoutamire, a visiting American scientest. (A report in these studies will be evaluated at a later date). $300.00

2) The construction of an agitating table for Tissue Culture of The Australian Terrestrial Tubers. For presentation to the Canberra Botanic Gardens. (This has been completed and delivered). $250.00

3) Supply fencing materials for the "Cristata Compound" at Salmon Gums W.A. Eight acres of land belonging to Mr. Norm Scheer was fenced for the protection of *Caladenia cristata* an orchid rediscovered after being 'lost' for 54 years. (This fence was completed 27.12.'77). $200.00

4) For research workers in updating "Orchids of the West" by Rica Erickson. The last edition printed in 1965 is now out of print. Since then a number of name changes and 'new' orchids have been described for inclusion. ("Orchids of the West" is considered the standard work on W.A. orchids. $600.00

5) For the study of orchids of the north-west coast and adjacent islands of Tasmania by Mr. Peter Tonelly, including the Hunter Island group. $200.00

6) An expedition to the McIlwraith Range in Cape York Peninsula, to compliment the survey of ochids that was commenced in the Iron Range area in 1976. This expedition is aimed at completing the work in this region. The McIlwraith Range is an area of high priority for conservation. It is likely that the whole area will one day become a National Park and the data gained on these expeditions is likely to be most useful in future management plan of the region. (This expedition will be conducted jointly with the National Parks and Wild Life Service of Queensland).
An amount up to . . . $1500.00

7) To sponsor an 'Encouragement and Educational Workshop on Orchids at the Hawkesbury Agricultural College, NSW, on 26th and 27th August, 1978. This weekend will follow the International Horticultural Congress to be held at the College the previous week when glasshouses and other equipment are expected to be erected which may be used as part of the workshop subjects.
An amount up to . . . $500.00

8) The planned expedition to the south-east region of Western Australia will be deferred until, 1979, because most of the expected participants are committed to other work at this period.

A request for funds and support by Mr. Mark Clements of Canberra to study and survey orchids on the coast of Arnhemland N.T. during February, 1978, was considered, but advice was received that the necessary funds for the expedition were made available by the Department of the Capital Territory.

The above program of events illustrates a clear picture why appeals for funds are being made which will govern the future activities of the Foundation.

New Australian Native Hybrids
(— or What's in a Name ?)

We have no new hybrid registrations to report from recent issues of the Orchid Review. However, we reprint below a notice by the R.H.S. at p.viii of the Orchid Review for January, 1978. Its importance for exhibitors and judges of Australian hybrids will be apparent.

IMPORTANT NOTICE TO DENDROBIUM GROWERS, REGISTRANTS AND ORIGINATORS
regarding *Dendrobium compactum* Rolfe (1913)/*Dendrobium bigibbum* var. *compactum* C. T. White (1941)

There has recently arisen good reason to believe that in most, if not all, cases where *Dendrobium compactum* has been accepted as a parent species in registrations, the plant used as the parent by the originators concerned may not have been TRUE *Dendrobium compactum* (see below) but the form of *Dendrobium bigibbum* often loosely referred to as simply *Dendrobium compactum*, which, for registration purposes as a parent, is treated as within the species *Dendrobium bigibbum*.

TRUE *Dendrobium compactum* species is a very small plant about 8cm high, having small dull white flowers, as described by Rolfe in 1913 from a plant collected in China, and believed rarely, if ever, encountered since that time.

So far there are 20 registered hybrids having *Dendrobium compactum* recorded as a parent (all registered between 1961 and 1975) and in every such case the parent name will be corrected to *Dendrobium bigibbum* in registration records, subject to the provision below, and all consequential corrections effected. These corrections will be effected and published as they apply to registration lists in the *Orchid Review* and in published Addenda to *Sander's List of Orchid Hybrids* **UNLESS, in any such case, the originator of any such cross notifies the registrar not later than 30th June 1978 that the parent actually used in his case was in fact TRUE** *Dendrobium compactum*, as described above—which is so widely distinct from the well-known *Den. bigibbum* var. *compactum* as to make any identification uncertainty negligible.

In the meantime, and in future, in cases of applications citing *Dendrobium compactum* as a parent, the registrar will assume that *Dendrobium bigibbum* var. *compactum* is meant, unless the original application specially emphasises that TRUE *Den. compactum* Rolfe (1913), as described above, was in fact used as the parent—a possibility believed to be highly unlikely.

The 20 registered hybrids currently having *Dendrobium compactum* recorded as a parent are, alphabetically, as follows:—
Aitkenvale (1965); Allyn Gem (1973); Blue Button (1961); First Love (1974); Kailua (1965); Keiki Belle (1971); Kimi Itagaki (1975); Lavender Jewel (1970); Little April (1975); Little Diamond (1974); Little Princess (1969); Little Profusion (1972); Lois Shepler (1965); Merritt Island (1969); Midnight Prince (1972); Minapac (1974); Mini Pearl (1974); Pearl Yagi (1974); Pink Flare (1969); Sueo Sakamoto (1974).

There are also registered descendants from some of the above, but their records will require adjustment only in cases where a parent has been crossed in registration with **both** *Den. bigibbum* and *Den.* "compactum"—resulting in the need to cancel the later of the pair of grexes so evolved, and the consequent transfer of its progeny to be listed under the earlier of the pair. All the corrections which eventually prove to be necessary under the foregoing provisions will be published in the August 1978 *Orchid Review.*

When the Committee appointed by ANOS Council to compile our Checklist of Australian Native Orchid Hybrids (published December, 1977) began its careful check of the Sander's Lists and of those appearing monthly in the Orchid Review it considered those entries showing *D. compactum* as a parent and decided that it must take those entries literally and therefore exclude them from the Australian Checklist.

Having read the above notice, your Editor checked all twenty registered hybrids, listed in the notice, against the Sander's and other lists to find any that have other Australian species or hybrids as a parent along with the wrongly named species. Two of the twenty concern us here.

These are:

NAME	PARENTAGE	REGISTERED BY
DENDROBIUM		
Merritt Island	"compactum" (i.e., *bigibbum) x dicuphum*	Lynn M. Dewey Florida, U.S.A. (1969)
Mini Pearl	*canaliculatum* x "compactum" (i.e., *bigibbum*)	Ralph S. Yagi, Maui, Hawaii, U.S.A. (1974)

It is perhaps surprising (and fortunate) that nobody has so far registered crosses of *D. bigibbum* (as such) with *D. dicuphum* or *D. canaliculatum.* Before hastening to bring your copy of the Checklist up to date in the "Addenda" at page 12, you may wish to await the R.H.S.'s publication in the August 1978 Orchid Review of all the corrections eventually found necessary. In view of the reported insignificance of the Chinese species, *D. compactum,* Rolfe (1913), with its "small dull white flowers" you may however, think it unnecessary to wait. If you find it necessary to change your label reading D. "compactum" and you want to do the job properly you should make it *D. bigibbum* Ldl. var. *superbum* subvar. *compactum* (C.T. White) Dockr.

A.N.O.S. GROUPS

Hastings Valley Group.

A new regional Group of ANOS was inaugurated on 28 April, 1978 at Beechwood, in the Wauchope district of N.S.W. Some twenty four enthusiastic native orchid growers met under the chairmanship of Councillor Frank Palmer of Wauchope Shire Council who subsequently accepted the role of patron of the Group. The following office-bearers were elected:

President:	Kevin Blanch
Vice-President:	Lex Barton
Treasurer:	David Farrawell
Secretary:	Norma Blanch
Assistant Secretary:	Mavis Howe
Librarian:	Margaret Potts
Registrar:	Rodney Graeme

Meetings will be held at the Methodist Church Hall, Beachwood at 7.30 p.m. on the fourth Friday of each month. Native ferns, as well as orchids, will be shown at the meetings.

Mr. N. Hilliger, President of the Warringah Group, Sydney, attended the meeting and presented a complete set of back issues of the *Orchadian* for the new Group's library.

The Secretary may be contacted by writing to R.M.B. 60 Pappinbarra Road, Beechwood, 2446.

Wollongong and District N.O.S. will hold its Annual Show and Exhibition on 21, 22 and 23 September, 1978, at the Warrawong Regional Shopping Centre. ANOS Council will again provide Judges for this show. For more details and show schedule, contact Mrs. Y. Parkinson, Secretary.

W.A. Native Orchid Study and Conservation Group (Inc.)

In our last issue we referred briefly to the good work done by this affiliated Society in protecting an area where *Caladenia cristata* occurs. We had written to this Group seeking their cooperation in giving us material for publication. In reply (late December) their Secretary informed us that *Orchadian* articles are too technical for what the W.A. Group can offer and Mr. A.S. George is "our one and only member at this stage who would be capable, at a standard suitable for the *Orchadian* of writing articles and he is unfortunately, a very busy man." Nothing daunted, we drew on the Newsletter kindly sent to us by W.A. N.O.S. & C. Group for our "ANOS Groups" column in March. We reported, from that source, that *Caladenia cristata* had been rediscovered after forty years and we wished them luck in their approach to the Australian Orchid Foundation for assistance in securing protection for the long-lost *caladenia.* We were at fault, it now appears, on two counts. First, *C. cristata* had been undetected for 54 years (see page 190 this issue); second, by the time we heard of the protection plan from the Newsletter and offered our best wishes, the A.O.F. had already moved with commendable speed to provide funds for the fencing project. We now add our belated congratulations on a job well done by both A.O.F. and W.A. N.O.S. & C. Group !

We have deemed it fitting to give our readers the full story of "Cristata Compound" by courtesy of the Australian Orchid Foundation's May bulletin received directly from Mr. Gerald McCraith, President, A.O.F. This is just the kind of information we were seeking from W.A. Our readers like to get such (non-technical) news from members in other States.

Our long distance communication difficulty with W.A. may well be on the way to being solved following a recent visit to Perth by Mr. John Hill, a member of ANOS Sydney Group who has been co-opted recently as an ANOS Councillor. John speaks highly of the warm hospitality shown him by Mr. Herb Foote. At the Fourth A.G.M. held in conjunction with the February meeting, Mr. L. Sheppard was elected President (Mr. Herb Foote who was Foundation President having retired). Ms L. Penny continues as Secretary.

From the March Newsletter it appears that Rica Erickson's "Orchids of the West" is being revised at the W.A. Herbarium. "New" species will be added, distribution and habitat notes updated and keys revised. It is hoped that this work will be completed by the end of 1978 for publication in 1979. "Orchids of the West" is considered the standard work on W.A. orchids and the 1965 edition is now out of print. Once again the Australian Orchid Foundation is helping with a special research grant of $600. Members of the W.A. N.O.S. & C. Group are assisting in a number of ways and, by prior arrangement with Mr. Alex George are welcome to visit the Herbarium and assist in mounting and labelling the specimens they collect.

Blue Mountains and District O.S. (Affilated). This Society's Bulletin is popular all over N.S.W. and perhaps beyond. Our ANOS Council Secretary, Keith Edwards, is also Secretary of BMDOS and Editor of the Bulletin. The Society will be host to the N.S.W. Regional Conference in October, 1978 which has been well publicised throughout the orchid societies in N.S.W. Looking back over my copies of the BMDOS Bulletin (and "Orchid News" of the OS NSW) I realise that we have neglected to report an event of great significance. Alan Merriman of BMD OS has made history in being the first to gain the award of HCC/OS NSW for an Australian Native Species Orchid – *Sarcochilus falcatus* "Miriam Ann". To quote from the official report on this award of 28 November, 1977: "The plant carried two spikes with eight and six flowers . . . well held without bunching . . . 30 mm. across the petals."

Incidentally Ted Gregory's letter-article in the Bulletin (December) says "I'm being presented with slides of *another* (my italics) pink *S. falcatus* shortly." It seems to us that it's high time we had a feature article on these pink clones. I wonder if some kind person would finance a colour illustration to go with a good comprehensive article ?

Native Orchid Society of S.A. At its A.G.M. in March, this Society elected Mr. Noel Lothian, Director of the Botanic Gardens, Adelaide, as their Patron. Office Bearers are essentially the same as those elected last year. The Journal of this Society maintains a high level of interest. *Orchadian* readers generally should be interested in a brief article in the April issue by R. Bates on *Cymbidium canaliculatum.* He refers to recordings of it by Tate "near Lake Eyre" (with later authors copying this recording) and by Rogers (only as "sightings" and not as an actual collection in S.A.) Bates goes on to say that "after the flooding of Cooper's Creek and the Diamantina River in 1974-76 Brew collected a plant at Coongie Lakes in our North East. As it was growing on a broken branch in rubbish deposited by the floods it is probable that the plant had been carried from Queensland. It is likely that Rogers's and Tate's records result from a similar earlier flood. It is doubtful that such "visiting " plants would survive long under S.A. desert conditions and for these reasons *C. canaliculatum* is not listed as a true S.A. species."

In the May issue Les Nesbitt sets out his plans for an exceedingly practical way of spreading expertise in growing and conserving terrestrial orchids. He will do this by conducting a series of terrestrial cultivation workshops in which participants will get down to the practical jobs of mixing potting soil, potting up tubers, sowing seed and keeping experimental records.

Northern and Eastern Districts O.S. (S.A.) Affiliated with ANOS.) During April we received a letter from Mr. W.G. Joffre Keen, Hon. Secretary of this Society saying his Committee wished to apply for membership of ANOS. Mr. Keen enclosed a complimentary copy of "The Cultivation of South Australian Native Orchids" which was published by his Society in 1973 and limited to 200 copies. Readers will remember that we listed the little booklet at page 149 of the *Orchadian,* December 1977, with one of Peter Vaughan's briefest reviews which read "Perhaps NOSSA will reprint this informative work"). It appears this is not strictly a matter for NOSSA but for Northern and Eastern D.O.S. A footnote to Mr. Keen's letter should satisfy Peter Vaughan (now, by the way, a dental officer with the R.A.A.F. stationed at Amberley, Qld.) It reads "As soon as Black's *Flora of S.A. Part 1* has been revised and published, our publication will be corrected." The booklet (with Introduction by Les Nesbitt and 16 pages of very useful text, tables and line illustrations) is gratefully accepted by ANOS Council.

We welcome this newly affiliated society and include it under "Who's Who" in this issue.

The Victorian Group's Tenth Anniversary Spring Show will be staged at the National Herbarium on Saturday 7th and Sunday 8th October following the normal monthly meeting on Friday 6th October, 1978. Interstate visitors to Melbourne at that time will be especially welcome. We hope to have much more to tell about this Spring Show in the September *Orchadian.*

BOOK REVIEWS

ORCHIDS FROM SEED by P.A. Thompson.

Illustrated by S.A. Cox. Royal Botanic Gardens Kew, Wakehurst Place.

A Booklet of 34 Pages. (Our copy from the Native Orchid Society of S.A.)

After an introduction to 'natural' and 'artificial' orchid seed germination and plant growth there are eleven sections covering the following subjects.

1. Collecting, drying and storing seed
2. Preparing the nutrient solution
3. Making the stock solutions
4. Making the nutrient agar
5. Dispensing nutrient agar
6. Sterilising the tubes and flasks of nutrient agar
7. Sterilising the seed
8. Sowing seed
9. Growing on seedlings
10. Pricking out seedlings
11. Planting out seedlings

The first of the above sections describes a method used for storing orchid seeds for months or perhaps years. The next three sections deal with the preparation of nutrient agar. The formula commended is one developed in the Jodrell Laboratory at Kew. Full details are given for making both the stock solutions and the final nutrient agar.

Then follows a section describing the dispensing of the nutrient agar into flasks or other containers and sections dealing with the sterilising of both the nutrient agar 'flasks' and the orchid seeds. The longest section is devoted to the sowing of the seed and includes many useful hints on how to minimize the chances of contaminating the nutrient agar and seed during the sowing process.

The final three sections describe the conditions necessary for successful growth within the flask, the technique of 'reflasking' (if deemed necessary) and the planting out of the young seedlings from the flask to pots.

The text is well illustrated with high quality line drawings. The general design and layout is characteristic of the productions of Her Majestys Stationery Office, London.

There are two appendixes, the first of which compares and discusses the merits of several different nutrient mixes in common use. The second describes some simplified techniques that can be used instead of or in conjunction with those mentioned in the above sections.

Although the author assumes the reader has access to some laboratory facilities, he also indicates that there is room for ingenuity and variety so that people without these facilities can become proficient in the art of 'orchids from seed'.

This booklet is a "must" for all interested in growing orchids, be they experienced or learners in the art. At $3 the information—to—cost ratio is extremely high.

P.J. Collin.

ORCHIDS OF WESTERN AUSTRALIA

By Alex S. George and Herb E. Foote

Photographs by Herb E. Foote. Published by Westviews Pty. Ltd., (Western Australia). Copies are available at $2 from the W.A. Native Orchid Study and Conservation Group (Inc.) (See address, page 195).

"Orchids of Western Australia" is a magazine — like, 32 page paperback, printed on firm, high quality paper. Although it is not a new publication it is worthy of the attention of readers who may not have seen it.

Herb Foote's photographs of Western Australian Terrestrial orchids, and accompanying brief notes, fill most of the book. In addition, there are two pages of more general notes, with a brief discussion of the diversity, natural history and habitats of these orchids. Colour photographs of thirty-one species are presented, and in the case of the more variable species, such as *Caladenia huegelii, C. filamentosa* and *C. flava,* more than one photograph is included. There are also fourteen rough sketches of various species which have been added for aesthetic reasons. They balance beautifully the descriptive text of the printed pages and serve to emphasise by contrast the brilliant photography of the colour plates. Western Australian *Caladenias,* which must rate among our most spectacular orchids, are highlighted, although *Cryptostylis, Leptoceras, Drakaea, Elythranthera, Diuris, Thelymitra, Pterostylis, Lyperanthus* and *Prasophyllum* species also appear.

The standard of the photographs is consistently excellent, giving the reader a bird's eye view of the fascinating structure and colour patterns of these flowers. The accompanying text gives plant and flower sizes, explanations of common names, species habitats and other interesting information that is not usually included in such books, (or in any books for that

(cont. . . .)

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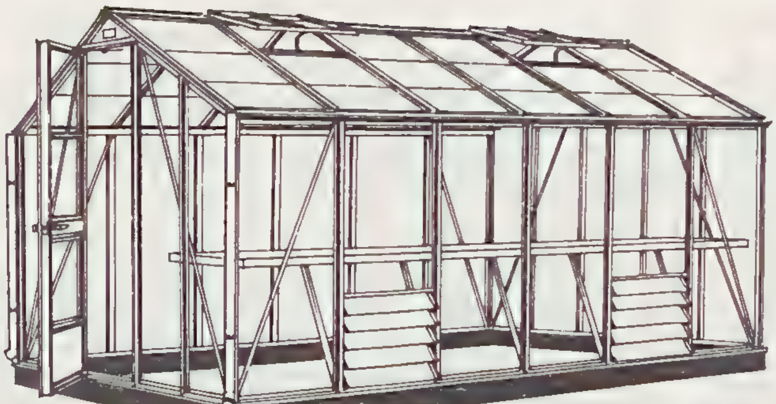

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matter !). The authors have not written lengthy morphological descriptions, and these are not needed in a book of this type; instead, the photographs are allowed to "speak for themselves". Alex George is the authority on the taxonomy of Western Australian orchids, being the "orchid botanist" at the Western Australian Herbarium. Consequently, the nomenclature used was correct at the time of publishing, although some of the names have since been changed. (Readers may bring copies of the book up-to-date by referring to "Recent Name Changes and New Names in Australian Orchids" by D.R. Blaxell, Orchadian Vol.4: pages 76-77).

To conclude, I highly recommend this book as an excellent introduction to the orchids of Western Australia. The well written text and superb photography should even interest readers with no previous knowledge of orchids or wildflowers. More books of this type are needed to help raise public awareness of Australia's wildlife and the measures required for its conservation. It should be in the library of every orchid society and of every native orchid enthusiast.

— Peter Weston.

ANOS JUDGING COURSE IN SYDNEY

The ANOS Council's Judging Committee opened its first training course at the Ryde School of Horticulture with a three hour session on Sunday morning, 11 June. The Committee is to be congratulated on the efficient organisation of this opening session. Apart from the well appointed lecture room provided by the Ryde School every consideration was shown for the comfort of the students — from writing materials and visual aids even unto the morning tea so necessary between the two lectures. If the course continues at this standard it should be a great success.

The first lecture — on classification of the orchid family — was delivered by Mr. W.T. Upton; the second — on the geographic distribution of Australian orchids — was given by Mr. D.F. Blaxell. Both lectures were of high quality and in keeping with the standard set by the Committee for this course. The botanical classification of orchids provided the background setting and Don Blaxell's presentation of the distribution of our orchids — using colour slides for each of these — was something of a masterpiece in simplicity, making absolutely clear to the audience in a short space of time the results of what must have been very painstaking research over a long period. This sort of original material is not generally available and is of great interest to any student of our orchids and not merely to those who aspire to become judges. It must have brought home to all 24, or more, who were present the need for amateur orchidologists to report any unusual findings in the field to National Herbariums. In this way they can contribute to the mass of data needed on distribution studies and at the same time show appreciation of the work our botanists do — and of their willingness to help us. We are extremely grateful to Don Blaxell for his contribution to this course.

ORCHIDS OF THE MALLEE — by D.R. Voigt.

Just before going to press we received a copy of this paper from Mr. Voigt. It is a roneoed article with a humorous cover illustration depicting an orchid "nut" in the field — complete with cameras, binoculars and other paraphernalia. The contents of the paper, however, are wholly serious and contain much that is of general interest — particularly on the "Cristata Compound" (see p.190 of this issue), the nature of surrounding land, low-rainfall semi-desert, types of soil and rocks, and so on. All genera and species found are listed and a map is given. Readers seeking more detail of this area's orchids should write to Mr. D.R. Voigt, C/- W.A. Native Orchid Study and Conservation Group (Inc.) for a copy of his paper. (We understand from Mr. Jim Simmons that NOSSA has asked for twenty copies).

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Who's Who.

THE AUSTRALASIAN NATIVE ORCHID SOCIETY OFFICERS AND GROUP CONTACTS.

A.N.O.S. Councillors.

Eric G. Gordon, (Immediate Past President). L. Bradford and R. Lowe (Vice Presidents). M.J. Corrigan, P. Vaughan, G. Wells, P. Weston.
For executive officers see front cover.

A.N.O.S. Group Officers and Affiliated Societies.

NEW SOUTH WALES:

- *Sydney Group:* President: J. Walker (Tel. 419 2529)
  Meets 8 p.m. 2nd Friday each month, 39 Lower Fort Street, Miller's Point.
- *Warringah Group:* President: N. Hilliger (Tel. 99 2468)
  Meets 8 p.m. 2nd Thursday, Stony Range Flora Reserve, Pittwater Road, Dee Why.
- *Newcastle Group:* President: W. Murdoch, 30 Robey Road, Coal Point. 2283.
  Meets 4th Wednesday, John Young Community Hall, Thomas Street, Cardiff.
- *Wollongong and District:* Secretary. Mrs. Y. Parkinson, 23 James Road, Corrimal 2518.
  Meets 2nd Tuesday at the Meeting Room of the Wollongong Town Hall.
- *Hastings Valley Group:* Secretary: Mrs. N. Blanch, RMB60, Pappinbarra Road, Beechwood, 2446.
  Meets 7.30 p.m., 4th Friday at Beechwood Methodist Church Hall.
- *Blue Mountains and District Orchid Society (Affiliated):* President: D. Wallace (Tel. 39 2091), Secretary: K. Edwards (Tel. 21 8126)
  Meets 8 p.m. 4th Friday, Red Cross Hall, Springwood.
- *Cumberland Orchid Circle (Affiliated):* Secretary: J. Jones, 121 Cardinal Avenue, West Pennant Hills, 2120.

VICTORIAN GROUP:

- Secretary: Mrs. R. Wootton, (Tel. 754 6585)
  Meets 8 p.m. 1st Friday, the National Herbarium, Royal Botanic Gardens, Melbourne.

QUEENSLAND:

- *Darling Downs Group:* Secretary: Dr. N. Grundon (Tel. 35 2570)
  Meets 7.30 p.m. 3rd Friday, Adult Education Centre, City Hall, Ruthven Street, Toowoomba.
- *Native Orchid Society of Queensland (Affiliated):* President: R. Unsworth. Secretary: J. Warner, c/o G.P.O. Box 1358. Brisbane, Queensland 4001.
  Meets 8 p.m. 1st Monday at Bread House, 49 Gregory Terrace, Brisbane.

SOUTH AUSTRALIA:

- *Native Orchid Society of South Australia:* Secretary: E.R. Hargreaves, (Tel. 293 2471 or 297 3724)
  Meets 4th Tuesday, Goodwood Boys' High School, Hardy Street, Goodwood, Adelaide.
- *Northern & Eastern Districts Orchid Society (Affiliated):* Secretary: W.G. Joffre Keen, 22 Campbell Street, Oaklands Park, South Australia 5046.

WESTERN AUSTRALIA:

- *W.A. Native Orchid Study and Conservation Group (Inc.) (Affiliated):* Secretary: Ms L. Penny, Unit 6, 63 Fourth Avenue, Mt. Lawley, W.A. 6050.
  Meets 1st Friday at the Dept. of Agriculture's Film Room, Jarrah Road, South Perth.

NORTHERN TERRITORY:

- *Darwin Orchid Society of N.T. (Affiliated):* President: Mrs. R.L. Bromwich, Secretary: Mrs. G.C. Heinemann, P.O. Box 38493, Winnellie, N.T. 5789.

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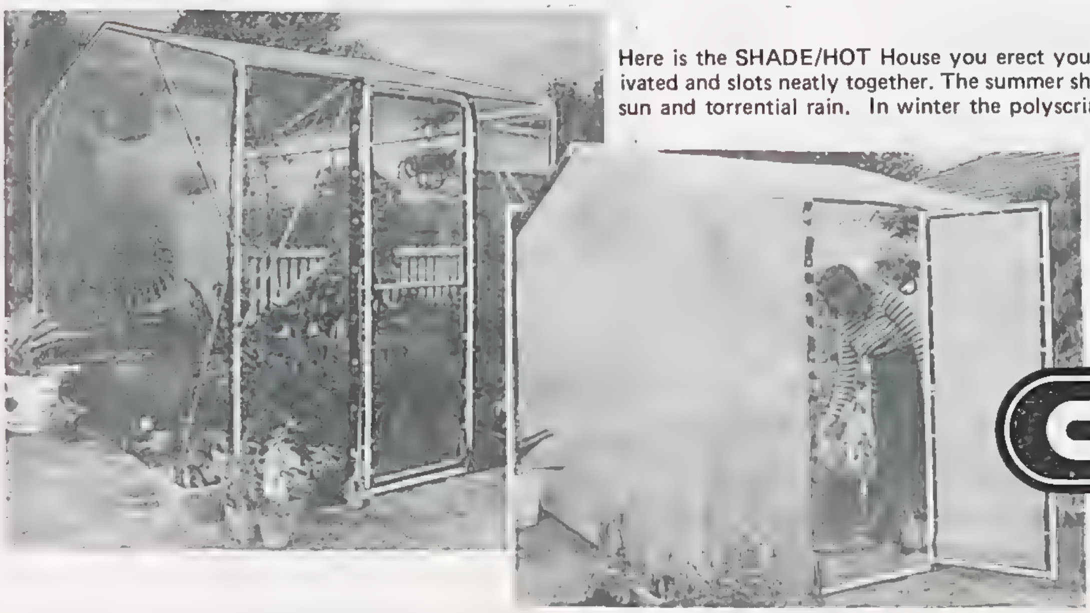

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